

# Distant Worlds 2

Read me File – 17<sup>th</sup> April 2025

Version 1.3.0.3

## Welcome.

Thank you for playing Distant Worlds 2™! We are always looking for ways to improve your gaming experience. For the latest information on the game, please go to the [Matrix Games web site](#).

Below you will find the latest and greatest information on Distant Worlds 2™. Information in this document supersedes that in the official game manual.

## Troubleshooting:

Ensure that your system meets the minimum system requirements. These are found in the game manual. Also, ensure that you have the latest video and sound drivers available for your system. The vast majority of reported problems are resolved by upgrading all drivers to the latest versions.

If you are still experiencing problems with the game, please use our [Ticket System](#) or post in the Distant Worlds 2 [Support Forum](#). Please provide as much detail on your issue as you can.

**To obtain optimum game performance, close all other applications before beginning a game.**

**IMPORTANT NOTE:** If you still experience crashes, please try the new DXVK rendering option in the game settings. This can be found under "Rendering Mode", which can be switched from DirectX 11 to DXVK. DXVK should also be used together with SDR (rather than HDR) for best results. This will likely resolve many issues caused by driver bugs or incompatibilities. If you try this setting and the game does not launch, please note there is a command line option to switch back to DirectX 11. To use add /use-dx11 as a command-line argument to DistantWorlds2.exe.

## Change History:

### v1.3.0.3 – 17<sup>th</sup> April 2025

*This major update is focused on improvements to the management of your fleets, to make fleet tactics settings easier to understand, improved default fleet tactics, add the ability to upgrade fleet templates and make fleet topup more efficient and intelligent. There are a number of other fixes and improvements as well, based on feedback after the release of the Control update and its manual play improvements.*

#### **CRASH FIXES**

- fixed rare crash when determining fastest construction yard for retrofit
- fixed rare crash when resolving message images
- fixed rare crash when setting image for new random character
- fixed rare crash when resolving message images
- fixed crash when determining construction resources
- fixed some modding-related crashes

#### **FLEET IMPROVEMENTS**

*This update includes some major changes to Fleets, Fleet Tactics, Fleet Policies and Fleet Templates, in an attempt to make it easier for new and experienced players to manage their fleets, both in manual and automatic play. Please read through the changes below carefully to understand what has changed.*

#### **FLEET DOCUMENTATION**

- updated all tooltips and Galactopedia topics relating to fleet engagement range to reflect recent changes

#### **FLEET TACTICS**

- simplified Fleet Tactics dialog to only show the most commonly used and essential settings, with other settings hidden by default as advanced settings
- improved default Fleet Tactics to better match most player preferences

- updated Fleet Posture description to more accurately describe engagement settings for Manual and Invasion fleets (Nearby)
- improved Fleet formation layout
- generally made fleet formations tighter and set default Fleet formation to Very Tight
- Manual and Invasion fleets will now only auto-respond to Nearby threats (within 5000 units) instead of any threats within the same System (regardless of Fleet Engagement Range), but there is a new policy setting to adjust this (see below)

#### **FLEET TEMPLATES**

- fleet templates will now be automatically upgraded to use the most relevant template for the role, i.e. when new ship roles become available then a better fleet template containing that new role may be selected for the fleet. Can enable/disable using new Automation setting in Empire Policy screen (Fleet Template Upgrading)
- added new default templates for early Escort-based fleets
- default Fleet Templates now disable Role Up/Downgrade, thus improving behavior of fleet topup
- automated fleet creation now strictly follows Fleet Template setting for Role Up/DownGrade, i.e. will not select ships of different role if turned off for template
- added Default Formation setting to Fleet Template screen
- changed fleet engagement ranges: 50% of Fuel Range is now 40% of Fuel Range and 33% of Fuel Range is now 30% of Fuel Range.
- auto-generated fleets now select better fleet template based on highest available military ship role and total number of ship roles covered
- added unit range details to description of Nearby engagement range setting (5000 units)
- added new option Fleet Templates List screen to allow/disallow Auto-Upgrading for each fleet template. Click on column to toggle. All templates are set to upgrade by default.
- increased number of Fuel Tankers in default Attack Fleet Template
- added Fuel Tankers to default Invasion Fleet Template

#### **FLEET POLICIES**

- added new empire policy settings to control maximum auto-response range for Manual and Invasion fleets. By default these are set to 'Nearby' threats, but can be increased to Location- or System-level. See Fleets section of Empire Policy screen for details
- Fleet Posture automation settings: now have separate settings for Attack Fleets (Attack, Raid, Invade) and Defense Fleets

#### **FLEET TOPUP**

- fleet topup now considers existing fleet ships as matching the template, even when using specific designs in the template, as long as the ship will retrofit to the specified design (Retrofit Path). Thus it is usually best to first Retrofit a fleet, then Topup
- fleet topup now better at building new fleet ships at construction yards near the fleet
- Top Up Fleet button is now properly disabled when will not change fleet composition (no ships added or removed)
- Topup fleet button tooltip now shows breakdown of existing ships and newly built ships that will be added to the fleet, including total cost for new ships
- Top Up Fleet button tooltip now also shows ships that will be removed (by role) when Trim Excess is enabled for fleet template
- Top Up Fleet button tooltip now also shows unaffordable ships that will not be built, along with cost
- fixed Fleet Top Up process sometimes mistakenly removing too many ships when Trim Excess is enabled for fleet template
- manually-initiated fleet topup now forces removal of any excess ships (as defined by the fleet template)
- improved automated fleet topup logic when fleet template items use 'Latest Design for Largest Hull for Role'

#### **FUEL TANKERS**

- Fuel Tankers in a fleet will now respond to 'Refuel from Tankers' right-click manual fleet mission even when the tankers themselves are set to manual control

- increased willingness of automated Fuel Tankers to refuel ships (higher fuel threshold)
- Fuel Tankers in a fleet are now excluded from following fleet override tactics, thus allowing them to behave differently and avoid engaging in battle

#### **FLEET AND SHIP BEHAVIOR**

- Defense fleets now more careful about auto-responding to incoming enemy fleets at other locations when target location already has enough defending strength
- automated fleets are now more careful about investigating dangerous locations with higher enemy ship strength than the fleet
- automated fleets are now more careful about attacking strong enemy ships, bases and fleets, and are now more willing to coordinate multi-fleet attacks against these strong targets
- ensure automated fleets always honor engagement range when selecting attack targets
- fleet ships now exit hyperjump in formation, even when jumping to non-specific target (e.g. galaxy coordinates)
- now exclude fleet ships that cannot jump (e.g. damaged hyperdrive) when synchronizing fleet jumps while waiting for fleet fighters to board their carriers. This ensures that fleet jumps do not get held up by damaged carriers. This can especially be a problem when Fleet Ship Management is manually-controlled and the player chooses not to remove damaged ships from the fleet
- automated fleets are now more careful about avoiding attacking a threat to a fleet ship when the fleet ship is not at the fleet location or within the fleet's engagement zone. This can especially happen with Fuel Tankers as they obtain fuel at distant locations
- automated ships will now escape/retreat (when tactics specify) even when loading cargo (e.g. Fuel Tankers) as long as not docked inside base

#### **FLEET UI IMPROVEMENTS**

- when Fleet is selected in Selection Panel, now show icons for Military Attack Automation status and Fleet Role, along with explanatory tooltips, to help player notice when automation policies may influence fleet behavior
- added Switch Fleet Role button to Fleets List to allow directly changing the role of each fleet in the list

#### **UI IMPROVEMENTS**

- when your empire has reserved funds (saving up for Colony Ships, etc) then indicate by changing color of cash amount to yellow in header bar (hover for details)
- fixed filters in Mining Locations list so that properly consider Fuel/Construction/Luxury Resources filter options
- fixed display of Scenery bonuses in Resort Locations and New Resort Locations Lists so that now also includes bonuses from Ruins definition, not just Ruins directly
- added note to Known Locations tooltip in Resources List to explain that some of these may be in foreign territory

#### **RESEARCH**

- added Extremely Slow Research speed option in Start New Game screen. This new setting is half the speed of Very Slow research speed

#### **GOVERNMENTS**

- ensure Refugee Fleet factions (e.g. initial Shakturi arrival) can always establish outposts, even when suitability at target planet is extremely low
- feudalism average time between change of leaders set to 25 years instead of 20

#### **BOMBARDMENT**

- plagues and other colony events no longer block bombardment from completely eliminating the population at a colony or outpost

#### **DIPLOMACY**

- fixed diplomatic trades and gifts from advisor suggestions not reaching recipient
- fixed sometimes getting duplicate acknowledgement messages after giving diplomatic gifts or trades

#### **TOURISM**

- ensure independent colonies properly display scenery bonuses in the New Resort Locations list

#### **CONSTRUCTION**

- fixed manually-assigned Construction Ships continually building Defensive Bases at colonies

## **NOTIFICATIONS**

- prevent message popups for several delayed story events when Suppress All Popups enabled in game settings

## **ZENOX FACTION REFRESH**

- fixed Zenox Preserve the Ruins event sometimes not changing the ruins

## **RACES**

- mortalen received a minor buff to their race bonuses

## **ATUUK AND WEKKARUS DLC**

- prevent message popup for Atuuk Rapid Unscheduled Disassembly when Suppress All Popups enabled in game settings
- ensure Wekkarus Deep Labyrinth event properly sends notification message to empire who loses spy
- fixed Atuuk Great One event sometimes incorrectly sending notification message to player empire
- turning off Race Victory conditions in game setup now also properly turn off Atuuk Great Direction victory objectives. The Great Directions will still occur, but there will be no related victory objective for each direction

## **QUAMENO AND GIZUREAN DLC**

- fixed Gizurean Rivalries event not occurring
- quameno received a buff to their research bonus and a decrease to integration unhappiness
- increased frequency of Gizurean Tribal Conflicts event

## **IKKURO AND DHAYUT DLC**

- ikkuro received a minor buff to their race bonuses

### **v1.2.9.8 – “Control” - 14<sup>th</sup> March 2025**

*This major update is focused on improvements to manual control of your empire, including Queued Missions, UI Improvements, Policy Improvements and a new Galaxy Search feature to make empire management easier when you turn off most of the automation. There is also a full refresh of the base game Zenox and Boskara factions to bring them up to the same level as the DLC factions, including a significant update for the look of the Zenox shipset. Finally, there are many other fixes and improvements, including to ship and fleet behavior, AI improvements and a major adjustment to economic and research bonus funding..*

## **CRASH FIXES**

- fixed crash when applying Migration or Tourism settings while starting game
- fixed crash when fulfilling resource order
- fixed rare crash when selecting random ship component to damage when weapon strikes ship
- fixed rare crash when drawing facilities at a planet
- fixed rare crash when generating new ship design
- now prevent the game from crashing when mod bundle loading fails for any reason. Instead now add error message to Session Log
- fixed crash when transferring artifacts discovered in ruins
- fixed some rare crashes
- fixed rare crash in Character screen
- fixed crash when generating XML schema
- fixed rare crash when loading game
- fixed rare crash when fleets check for threats
- fixed rare crash when progressing Shakturi rift destabilization
- fixed rare crash when finding fastest construction yard for ship retrofit

## **ENGINE IMPROVEMENTS**

- upgraded to latest version of .Net random number generator

## **PERFORMANCE IMPROVEMENTS**

- performance improvements, especially in large games with much ship debris

- improved performance when editing a ship design where there are already very many ships of the same role (e.g. fighters)
- improved performance when opening Research screen in large games with many Research Stations

### **GALAXY SETUP**

- added new settings in Start New Game screen for Your Empire Starting Situation step: Homeworld Situation allows setting whether start at planet or moon. Home System Critical Resources allows setting whether all critical construction resources are ensured to be available in your home system
- made small improvement to empire color distribution (making each empire color different)

### **QUEUED MISSIONS**

*Queued missions have been a long-requested feature and this is their first appearance in Distant Worlds 2. We hope this implementation will improve manual play and give more options for better control of fleets and ships.*

- added queued missions for Ships and Fleets. To use, hold down Shift key while right-clicking on a target to queue a mission (instead of immediately assigning it). Use Shift key with hold-right-click to popup a menu of available missions that can be queued. When a ship or fleet has queued missions, the popup mission menu will also have an option to 'Clear Queued Missions'. Missions that subsequently become invalid will be automatically removed from the queue, just as already happens for the current mission, e.g. when an attack target is destroyed or changes ownership, when you end a war against another faction, etc. Note that the Distance measurement system is now activated using the Alt key instead of the Shift key
- Queuing most mission types also switches the ship or fleet to manual control, with the exception of Refuel, Repair and Retrofit missions (as with normal mission assignment). Stop button now also clears all queued missions (not just the current mission). Alternatively, the player can hold down the Shift key when clicking the Stop button to just clear the current mission and proceed to the next queued mission. Assigning a new mission to a ship or fleet will also clear all queued missions
- Changed Stop command for automated ships and fleets so that pause before reassigning mission so that player can see the effects of their action

### **ZENOX FACTION UPGRADE**

*This update includes the Zenox faction refresh. This adds several new gameplay mechanics for the Zenox as well as an updated and improved shipset. For details, see 'Special Features' section of the Zenox race description in Start New Game screen (or their Galactopedia topic)*

- This build also includes a number of changes to Zenox components, research projects and planetary facilities, including the new Megatron Planetary Shield facility, expanded Crystal Sensors and Star Beams.
- upgraded models and textures for Zenox ships and bases
- added Zenox Search the Archives event
- added new event and loading art

### **BOSKARA FACTION UPGRADE**

*This update includes the Boskara faction refresh, including new gameplay mechanics and features. For details, see the 'Special Features' section of the Boskara race description in the Start New Game screen (or their Galactopedia topic).*

- includes a number of changes to Boskara research projects and planetary facilities, including the new Core-linked Weapons Mega Lab.
- minor graphical updates to models and textures for Boskara ships and bases
- added new event and loading art

### **EXPLORATION AND GALAXY SEARCH**

- added new screen to Exploration section: Known Stars, Planets and Moons. Can use various filters and sorts to find all known galactic locations
- added new screen to Exploration section: Search Known Items. Can search for any item by name. Type text to filter what is displayed in list. Will look for any known/visible stars, planets, moons, asteroids, ships, bases, ruins, facilities, characters, troop units and artifacts
- Pinged locations from galaxy map now show up in Special Locations list in Exploration section

(until explored)

## **UI IMPROVEMENTS**

- Main view header bar at the top of the screen will now automatically extend onto additional rows when content is too wide (e.g. lots of events and war scores)
- fixed combat icon in galaxy map sometimes failing to clear for a system
- fixed race bias display in Select Your Race screen so that includes zero-rated races
- added Resource Abundance sort option in New Mining Locations list. Sorts by total abundance and includes total abundance of all asteroids within mining range
- in Selection Panel, sub-selected facilities and troops at a colony can now be deselected by clicking on them again
- added section line dividers when displaying detailed stats for all components and planetary facilities
- fixed Migration and Tourism flow map overlays to show flow lines for correct selected race
- fixed very long lists sometimes being truncated, e.g. Ship Designs list
- added tooltips to relevant sections of Start New Game screen to explain how to completely disable pirates (e.g. story-related, etc)
- hovering Fleet posture description in Selection Panel now previews Tactical Settings window, clicking the Fleet posture description opens Tactical Settings window
- hovering Fleet posture description in Selection Panel now previews Tactical Settings window, clicking the Fleet posture description opens Tactical Settings window
- improved mouse up/down operations in various areas to help avoid mistaken clicks: Population Policy screen no longer closes when click between policy settings buttons for each race, Research screen no longer registers mouse-up event on Queue Suggested Project button immediately after opening screen
- added new filter options to New Mining Locations list: Fuel Resources, Construction Resources, Luxury Resources
- added new sort option to New Mining Locations list: Safe Locations First (Dangerous Locations at bottom)
- added title to colony bonus tooltips in Selection Panel to clarify that Empire Bonuses listed in the colony selection dialog are \*from\* the colony (NOT a comprehensive list of all empire bonuses that apply to the colony – to see all empire bonuses that apply throughout your empire look at the Bonuses tab under the top left Empire overview)

## **EMPIRE POLICIES**

- added new empire policy settings to control whether your empire will auto-scrap military ships and troops when have serious economic shortfall. For player these are off by default

## **WEAPON POLICIES**

- A new weapon policy for shield enhancement components has been added. You can now set a priority level for your faction to use the shield enhancement component.

## **PLANETARY FACILITIES**

- Terraforming facilities now take into account planet damage when considering whether suitability is below buildable level, i.e. planet damage is excluded when calculating build suitability. This will allow building terraforming facilities on damaged planets that would otherwise be suitable for terraforming.
- further reworked how planetary facility construction automation categories relate to specific facilities. Galactic Wonders are now clearly indicated in all situations. Added further automation categories for facility building: Construction, Research, Recreation
- extended criteria for determining planetary facility automation type so that Interstellar Trader's Bazaar and Holographic Network properly follow automation settings

## **SHIP AND FLEET BEHAVIOR**

- automated fleets now more careful to include other threats at location (e.g. other creatures) when evaluating attack against creature
- fleets now actively review lead ship while under construction, thus improving ability of fleet to move directly to new home base without first gathering to lead ship location while it is still under construction (which could be at a location different from the fleet home base)
- improved Fleet retreat evaluation to better handle unusual situations where attack target starts at

one location but then quickly moves to another well-defended location in same system, thus triggering a retreat from the attacking fleet

- fleets now prefer non-dangerous locations when refuelling, but will fallback to include dangerous locations if no other option (helps avoid Kasim and other dangerous locations)
- Defense fleets will now auto-attack fixed targets (i.e. bases) when needed, so that their behavior is better aligned with investigating Dangerous locations
- automated fleets will no longer assign attack (clear defenses) or blockade missions against independent colonies
- automated 'Refuel and Attack' fleet missions will no longer use attack target for refuelling, e.g. when attacking/invading an independent colony
- improved automated fleet troop loading so that attempts to load larger groups of troops even when load colony is further away
- improved display of Fleet posture in Selection Panel, especially for Manually-controlled fleets, thus giving better visibility to when the fleet will auto-engage targets
- fixed rare issue where fleet undertaking invasion mission with staging point may become indefinitely stalled

#### **FLEET TEMPLATES**

- fixed Load/Save Fleet Templates functionality
- fixed missing tooltip for Fleet Templates button

#### **SHIP DESIGN**

- changed Upgrade Design button so that now selects best upgrade component for each existing component, retaining the same component family. Previously the Upgrade Design button simply selected the highest tech level component for the category. See button tooltip for more info
- rebalanced component selection logic so that automated research and designs much more strongly guided by preferred weapon families from empire policy, even when faction also has preferred weapon components
- ship and base designs are now refreshed much sooner when you change preferred component families in the Empire Policy screen (when Ship Design is automated)
- in Ship Design screen, left-clicking on an empty bay in the model in the main view will now popup a component selection list (same as left-clicking on an empty bay in the Design Bays list)
- rebalanced some component and research project scoring to improve research pathing and ship design for some factions (take better account of their preferred component families)
- Capped maximum damage reduction for a ship from all sources to 90% (prevent invulnerable ships)
- ensure automated ship and base design always follows policy settings for Weapon preferences, even when evaluating weapon fallback options (when do not have a weapon of the desired category). This means avoiding selection of fallback weapons where policy specifies that particular weapon category should be 'Do Not Use'

#### **RESEARCH**

- non-specific research progress and breakthroughs from story events, abandoned ships/bases and ruins will now try to avoid selecting projects that are explicitly disabled for the discoverer race, i.e. when disallowed for the faction on the tech tree

#### **VISIBILITY**

- adjusted visibility level when have direct presence at location (e.g. ship or base) so that high-level Stealth components do not make items completely invisible

#### **BOARDING AND RAIDS**

- slowed down boarding assault rate to improve Capture and Raid missions for ships and bases

#### **EMPIRE BONUSES**

- fixed empire bonuses being applied twice to ships in a fleet

#### **TROOPS**

- ensure that Special Forces troops defending a colony are never invulnerable to attack

#### **TARGETS LIST**

- Fixed Enemy Targets list filter sometimes not working for some empires

#### **DIPLOMACY**

- in Alliance list, for each Alliance show all their wars with other alliances and empires

- fixed last diplomatic gift date rarely not being recorded, resulting in too frequent gifts
- Bases in diplomatic trade deals (e.g. Mining Stations) now also include the value of any cargo onboard (at 25% of normal price)
- Vassalized empires may now accept peace offers from other empires when their parent empire is not at war with the offering empire, this fixes some corner cases where vassals could not exit wars
- fixed bug where advisor suggestions to offer diplomatic gifts could sometimes be implemented without player approval
- added totals to Offered Items section of Diplomacy trade screen

### **COLONIZATION AND OUTPOSTS**

- Automated Colony Ships now also check whether the system of a queued colonization target has subsequently become part of another empire's territory and thus can no longer be colonized (avoid load/unload passengers cycle)
- Adjusted AI evaluation of Outpost viability at a planet or moon so that give less priority to some lower-importance bonuses and so that automated Colonization does not establish Outposts at planets with empire bonus levels that are too low.
- fixed bug where independent colonies with races with very poor bonuses would sometimes not appear in New Colonies list
- further improvements to colonization target selection for Colony Ships, especially to avoid multiple colony ships targeting same planet

### **DOCKING**

- refuelling and cargo load/unload are now much slower (10%) when ship is not docked inside a hangar bay at a base, i.e. when parked outside base, or when loading/unloading from a colony
- fixed bug where docking bay components were not working when they were the only hangar-style components in the external bays of a design

### **GOVERNMENTS**

- fixed data bug in governments that allowed factions to exist with zero colonies, thus blocking empires from being removed when they lose their last colony

### **CHARACTERS**

- made negative character traits from passive activity much less likely for Generals and Admirals (Drunk, Poor Recruiter)
- when Spies complete a mission to Steal Tech from another faction, they now remember the details of the last mission, allowing easy one-click reassignment to the same or similar mission (same target faction, same mission type, same research project if not already researched)
- reduced amount of characters as empire grows larger, but with slightly higher amount at start of game
- added new sort options to Spies screen: sort by each spy skill type (Counter Espionage, Espionage, Sabotage, etc)
- fixed Prisoners list filters showing characters for wrong role
- automated Spies will now avoid selecting research projects to steal that are disallowed for their empire's race

### **ARTIFACTS**

- fixed artifact location transference so that always properly changes empire as needed

### **PLANETARY FACILITIES**

- ensure planetary tractor beam facilities properly review stats on game load so that function properly

### **GAME EVENTS**

- prevent pirates from triggering EmpireRelationChange events for independent colonies
- fixed 'Return of the Ancient Guardians' story event missing message title and text
- fixed initial Ancient Guardian vault techs sometimes not unlocking for player
- fixed Kasim story event for Dhayut so that Exterminating or Enslaving the population now properly removes the colony instead of just reducing the population to zero
- fixed some facility and story images to use Crashed Ancient Ship
- improved some faction story events relating to independent colonies
- extended message game event actions to allow forced aggregation of all message output for the



- event, even when the event has delayed execution
- added EmpireRelationChange game event trigger type for independent colonies to support various story events
- added new game event condition types to allow better story event options when have no available characters for a role
- fixed partially broken story event relating to planet Mikai

#### **GALAXY GENERATION**

- Slightly increased some bonus values for randomly-generated ruins

#### **SHAKTURI CRISIS**

- ensure Freedom Alliance forms without player after player rejects diplomatic story option to form Freedom Alliance themselves
- ensure Shakturi Beacon facility is properly removed after researching 'Destroy Shakturi Beacon' project

#### **PSYCHIC RESISTANCE**

- This is a new feature that will be used to support the next content expansion for DW2.
- Implemented Psychic Resistance value in various areas: intelligence missions, psychic weapons, psychic troop defection. Races with high Psychic Resistance (Shakturi) are less susceptible in these areas

#### **GAME EDITOR**

- allow changing color for any standard empire in Game Editor (Edit Empire > Primary Color). This affects the color of empire territory and ship/base symbols, among others
- improved overall lighting in Ship Design screen

#### **MODDING AND LOCALIZATION**

- Added support for zero-width spaces (Unicode 200B) as valid line-breaks when rendering multi-line text. This better supports localization for some languages (e.g. Japanese)
- added improved support for zero-width characters for Chinese/Japanese/Korean character sets (now rendered with zero-width in long text with word-wrap)
- added further improvements to zero-width character support for Chinese/Japanese/Korean character sets
- added Psychic Resistance to Empire Bonuses list with tooltip showing sources and amounts (e.g. race and any relevant artifacts)
- added new command line option to load a custom font bundle for localizing languages that use non-Latin character sets. Please see modding sub-forum for details.

#### **SHIP MODELS**

- fixed some minor issues in the Zenox small spaceport model
- updated Human ship and base models with fixed running light positions
- small updates to fix minor issues with some Ackdarian ship models
- various other model fixes

#### **DATA**

- Various adjustments to component and ship hull values
- Various ship hull fixes
- Various minor spelling and event fixes
- changed Teekan Ion Bomb category to Ion Weapon instead of Area Weapon

#### **IKKURO AND DHAYUT DLC**

- Added missing Artifact descriptions
- Various event fixes

#### **QUAMENO AND GIZUREAN DLC**

- Various event fixes

### **v1.2.7.7 – “Maintenance” - 26<sup>th</sup> November 2024**

*This major update is mainly focused on fixing issues that have been reported since the release of the Return of the Shakturi expansion, but also includes many other improvements, especially in the areas of Diplomacy, Fleet and Ship Behavior, UI and AI automation. This update also improves modding support for those using Harmony modding for localization and should make easier localization for languages with larger and special character sets much easier.*

#### **CRASH FIXES**

- Fixed Rare Timing Issues: added game setting to allow changing how time progression works ingame. Can be used to fix crashes and timing issues on some CPU/hardware configurations. If you are experiencing otherwise unresolved crashes, especially if you see timing mentioned in the crash log, please use the setting 'Game Timing Mode' at the bottom of the General section to switch to 'Always Use Safe Mode'
- Fixed rare crash when binding messages
- Fixed rare crash when loading a game
- Fixed crash when progressing Shakturi rift destabilization
- Fixed crash when checking Shakturi story victory conditions
- Fixed crash when resolving tradeable research projects
- Fixed crash when selecting design components
- Fixed crash when reviewing empire's planetary facilities
- Fixed crash when drawing race summary with faulty component data
- Fixed crash when initializing game
- Fixed rare crash when drawing Colonies list
- Fixed rare crash when drawing Selection Panel
- Fixed crash when selecting government for empire while generating galaxy
- Fixed rare crash when determining whether a ship is targeted by incoming weapons
- Fixed rare crash when rendering button
- Improved handling of invalid display adapter settings when resolving screen display mode
- Fixed crash when calculating system visibility level
- Fixed crash when updating known system data
- Fixed crash when reviewing construction of new planetary facilities
- Fixed rare crash when determining location visibility
- Fixed rare crash when calculating research project score
- Fixed crash with Establish Outpost task
- Fixed rare crash when performing exploration
- Fixed issue with ending wars with vassals
- Fixed crash when applying game setting changes before starting/loading a game in the session

#### **PERFORMANCE IMPROVEMENTS**

- Altered background game processing so that some higher-priority tasks happen more frequently: delayed game events, Shakturi story logic, research progression
- Improved performance of galaxy generation

#### **SOUND AND VISUAL EFFECTS**

- Fixed issue that could cause some sound and visual effects to not play during combat

#### **GALAXY SETUP**

- Fixed Colony Event setting in Start New Game screen so that when disabled it properly turns off disasters and randomly-initiated plagues
- Fixed planets and stars for some story locations sometimes being invisible

#### **SHAKTURI CRISIS**

*We have improved a variety of cases to make the crisis and story progression more robust and make sure that victory is achievable. Many of these are related to the path where the player joins the Shaktur Axis or does not join either alliance.*

- Ensure fallback option to provide planet destroyer tech to all members of both Freedom Alliance

- and Shaktur Axis occurs even when player is not a member of the Freedom Alliance
- When part of Shaktur Axis, you can propose votes, but vote outcome will be immediately decided by Shakturi (they are the only ones who actually get a vote in the Shaktur Axis)
- If player joins Shaktur Axis at any point then prevent any further event messages relating to Ancient Guardian communications
- When player is member of Shaktur Axis then modify the message relating to the arrival of Shakturi planet destroyers so that player sees this as a welcome development, and is not instructed to destroy them
- Shakturi Rise Again messages now also tailored for situation where player is either in the Shaktur Axis or neutral (not a member of Freedom Alliance or Shaktur Axis)
- When an empire joins the Shaktur Axis the Shakturi immediately gift them the cure for Shakturi Psionic Virus
- Disable 'Trouble in the Fleet' events when empire is a member of the Shaktur Axis
- Now always get proper welcome message when join Shaktur Axis or Freedom Alliance
- Shakturi no longer care about diplomatic envy of others power, thus allowing them to better add members to the Shaktur Axis
- Event chain where Shakturi approach Boskara to establish Shaktur Axis no longer fires when Boskara and Shakturi are already at war. Will also stop if war breaks out during negotiations
- Shakturi story event 'Capture a Beacon' will no longer trigger when player is member of Shaktur Axis
- Now check for early Shakturi defeat where they lose all colonies, outposts and colony ships prior to start of Shakturi war. Send message to player if achieved
- Ensure Shakturi Wormhole effects are removed from beacon location when beacon is destroyed, even when planet is destroyed
- Fixed EndColonyEvent game event action so that selects correct colony event. This ensures that 'Beacon Impacting Research' and 'Beacon Heavily Impacting Research' colony events are properly cleared during the Shakturi story
- Locations of Shakturi rifts and beacons are now further away from player than previously
- Prevent Shakturi empire from reappearing in Diplomacy screen after has been eliminated
- Ensure cannot expel 2nd to last member from Freedom Alliance so does not disband alliance
- Moved Biowarfare virus deployment projects to TL5 and added a pre-req path from their respective virus cure projects (requires a new game)
- Revised Neutralize Shakturi beacon event to remove reference to the beacon core artifact
- Altered Shakturi Research war missions to be select more achievable projects

#### **WAR MISSIONS**

- Shakturi war mission to destroy Shakturi beacons now calculates victory bonus amount based on remaining number of beacons that Shakturi control. This alleviates problems in some cases with getting to 100% victory for the Freedom Alliance where Shakturi only obtain control of some of the beacon locations, thus providing less opportunity to earn victory bonus using previous static values per beacon.
- Prevent sometimes getting duplicate war missions for same facility target (e.g. same Shakturi Beacon)
- Improved removal of war mission events at end of war so that not improperly triggered later
- Ensure all war mission completion messages honor 'Suppress All Popups' setting

#### **UI IMPROVEMENTS**

- Added Upgrade Facility button directly to list items in Planetary Facilities list when upgrade option available
- Added new filter to Planetary Facilities list: Upgrade Available, which shows facilities that can be upgraded
- Added extra filter options to Known Ruins list for various bonus types (Empire, Research, etc.)
- Messages relating to recovered navigational coordinates (e.g. from ruins or salvaged debris) now also usually includes the name of the nearest location (when known to the player)
- Remaining number of Outposts your empire can establish is now displayed in tooltip for 'Queue Outpost' buttons in New Colonies and Outposts list

- Added extra detail to button tooltip when cannot upgrade an Outpost to a Colony
- Galactopedia topic on Outposts now has explanation on upgrading Outposts to Colonies
- Queue Establish Outpost button now properly disabled when already at limit of one Outpost per Colony (with explanation in tooltip)
- Split out display of empire vs location bonuses in Artifact summary
- Added warning to tooltip for 'Queue Resort Base' button when there are no nearby tourism sources (large, well-developed colonies), thus making the location unlikely to be viable for a Resort Base
- Fixed Form Alliance button sometimes being incorrectly disabled when in game with Shakturi story disabled
- Fixed incorrect game star date in preview panel in Load Game screen
- Added list of installed DLCs to top-right corner of main menu screen
- War score in main view header bar now shown as millions once above 10M or below 10M
- Fixed Combat Map Overlay button sometimes retaining highlight color when toggled off
- Added description of migration status for each colony in Population screen from Selection Panel. Shows how likely population is to migrate away from or towards colony
- Added sorting options in Colonies & Outposts list for Migration status
- New Mining Stations list (and other lists for new bases) now properly disables 'Queue Base' button and shows missing construction resources in tooltip when have no spaceports and even colony does not have adequate construction resources

#### **DIPLOMACY TRADE VALUATION**

- Increased amount player pays for items in diplomacy trade deals (relative to other empire)
- Fixed pirate factions sometimes overvaluing Hyperdrive tech in diplomacy trade deals
- Fixed some research projects being valued too low in diplomacy trade deals
- Doubled value of territory and galaxy maps in diplomacy trade deals
- Fixed diplomacy trade deals not properly evaluating territory/galaxy maps and territory/galaxy map sharing treaties when offered together (territory maps should be valued at zero if galaxy map also included, galaxy maps should be valued at zero when galaxy map sharing treaty also included)
- Reduced value of ruins in diplomacy trade deals when have special research bonuses or are otherwise rated highly
- Halved value of independent colony locations in diplomacy trade deals
- Halved value of ruins and other special locations in diplomacy trade deals
- Altered value of Contact Empire items in diplomacy trade deals so that very large empires are not dramatically different from smaller empires

#### **DIPLOMACY**

- Fixed First Contact messages often having blank empire and race names
- Fixed diplomatic relation incident values sometimes being reset to zero when very large intervals between updating
- Diplomatic offers to vassalized empires are now properly discarded (no independent diplomacy) so that not incorrectly responded to later once empire is no longer a vassal (e.g. gifts and treaty offers)
- Vassals are also included when war ends between empires, i.e. when two empires agree to end war, their vassals will also end the war

#### **CHARACTERS**

- Improved character location selection so that more spread out and less location churn
- Improved distribution of ambassadors to foreign empire capitals where diplomatic strategy is aiming for ally status with high-level treaties

#### **ALLIANCES**

- Fixed cases where the player was unable to manually respond to 'Join Alliance' offer messages
- Ensure all members of same alliance use diplomatic strategy of Close Ally with each other

#### **FLEET AND SHIP BEHAVIOR**

- Extended 'Investigate Dangerous Location' missions to also include Defend fleets, however will not assign Defend fleets when your empire is at war
- Improved ability of fleets to remain in place to defend locations against incoming enemy fleets

- (avoid taking on other missions or going after creatures)
- Ships and colonies now properly autorespond to attacks from foreign ships when not at war with the attacking faction
- Increased default Defense fleet engagement range from 50M to 100M
- Improved automated selection of Defense fleet home bases so that better distribution throughout empire territory, with less clustering or overlap
- Added new fleet mission: Refuel from Fuel Tankers. Select fleet and rightclick for popup menu option. Fleet will be refuelled at current location by fuel tankers. Fleet must have available fuel tankers
- Now properly check whether foreign Assault Pod is hostile before intercepting with tractor beams (may be ally assisting with colony invasion, raid or capture)
- Improved fleet responsiveness to investigating dangerous locations, both queued and nonqueued. fixes a longstanding but difficult to find issue which caused many of the situations where some queued dangerous locations or targets outside of jump range but within engagement range were not being assigned a fleet.
- Fixed independent colonies sometimes being automatically invaded (or blockaded, bombarded, etc) despite diplomatic strategy of 'Diplomacy leading to peaceful Colonization'.
- Ships now better at avoiding dangerous and enemy locations when determining waypoints in jump path
- Fixed raiding pirate ships sometimes getting confused about mission when switch from base to ship for target (should not raid ships)
- When fleets are evaluating an attack against a base at a colony, they are now more careful to include the defensive strength from the colony itself (fighters, weapon facilities)
- Fleets are more careful to include colony defensive strength (fighters, weapon facilities) when considering whether a fleet will retreat from a location when attacking
- Planet Destroyer ship strength is now evaluated much lower (because damage consideration for super weapons is capped), thus making fleets much more likely to consider them viable targets and attack them

#### **SPACE CREATURES**

- Vordikar creature strength now factored higher to ensure more fleet strength assigned to attack

#### **SHIP DESIGN**

- Fixed situation where automated ship and base designs may very rarely not be refreshed upon researching new tech

#### **STARFIGHTERS**

- Fighters now more careful to avoid selecting targets that are nearby, and never outside current location
- Fighters will now stop automated attacks against a target if it is being boarded, thus better allowing capture missions to succeed

#### **TROOPS**

- RecruitedTroopStrength bonuses now properly apply when recruit new troops

#### **BOMBARDMENT**

- Characters and artifacts are now much harder to destroy via bombardment
- Ensure artifacts destroyed in colony bombardment do not respawn

#### **PLANETARY FACILITIES AND RUINS**

- Fixed planetary facility values for Bombardment Resistance and Ground Combat Resistance. Previously the values were improperly inverted where 0.2 was displayed as 80% resistance. It turns out this was incorrect and has now been changed so that 0.8 = 80% resistance. All data files have also been updated
- Tweaked logic so that facility building automation works better for some facilities which were incorrectly being treated as wonders (e.g. Special Operations Barracks and Planetary Defense Center)
- All generic ruins now have values added for Bombardment Resistance and Ground Combat Resistance
- Fixed Ruins summary sometimes showing details when ruins not properly known
- Fixed some filters in Ruins list improperly evaluating unexplored ruins as known

- Most Ruins bonuses are now empire-wide instead of location-specific (but with lower amounts), thus making them more appealing as Outpost targets

#### **ECONOMY**

- State base building at colonies (e.g. spaceports) now also considers large cash on hand as potential cashflow when considering whether to build new bases. This mirrors what happens with construction of state ships and potentially allows construction of first spaceport when Refugee Fleet colonizes first world but has low income due to low population

#### **TOURISM**

- Rebalanced Tourism income so that better return from Resort Bases. The scenery bonus amount at the location is also now a more important factor for income

#### **COLONIZATION**

- Fixed Colony Ships repeatedly loading/unloading population when queued colonization target can no longer be colonized because has since become part of another empire's territory

#### **INTELLIGENCE MISSIONS**

- Auto-assigned spy missions for 'Infect Colony with Plague' now preferentially selects known colony targets with populations that are susceptible to the plague used (for example, using the Xaraktor virus on primarily Shakturi-populated worlds)

#### **RESEARCH**

- Increased research priority for super weapons and planet destroyer hulls

#### **MODDING**

- Re-enabled full Chinese language support by updating both DW2 and the DW2ChsPatch mod. These changes further enable Harmony modding in DW2
- The Chinese language mod can serve as a template for other languages that use custom character-sets and fonts, e.g. Cyrillic languages, Japanese, Korean, etc
- Localization modders: please ask if you'd like support to get this working for your language

#### **DATA**

- Fixed some issues with incorrect Ship Hull component bay sizes for hangars and general bays in a few ship and station hulls
- Corrected typo giving Medium Space Ports too large a targeting bonus
- Increased bombardment resistance slightly for planetary shield facilities
- Greatly increased bombardment resistance for planetary bastion facilities
- Increased empire bonus for recreation tech tree facilities
- Improved Zenox Galactic Archives wonder
- Increased Mortalen growth rate by 1%
- Reduced size of Mortalen Block Armor and improved its reactive rating
- Strengthened bonuses for all Spaceports, Defensive Bases and Carriers
- Buffed Ion Shield components to increase ion defense
- Fixed game events 'Ancient Clone Planet Chain' and 'Lost Teekan Colony' so that no longer artificially inflate planet quality

#### **QUAMENO AND GIZUREAN DLC**

- Gizurean penalty to All Research changed to -15% (from -10%)

### **v1.2.6.7 “Strategy” – 24<sup>th</sup> October 2024**

*The “Strategy” update includes months of improvements done to support the Return of the Shakturi feature expansion, with a focus toward improvements related to player and AI management of mid to late game conflicts.*

#### **CRASH FIXES**

- Fixed crash when starting a new game using Chinese language mod (could also fix issues with some other localization mods)
- Updated encryption tool to version 6.9.8.0 which has better support for .Net 8 and may resolve issues with localization mods
- Fixed crash when opening message
- Fixed rare crash when merging exploration maps
- Fixed rare crash after destroying planet

- Fixed crash when loading game
- Fixed crash when fleet evaluates threats
- Fixed crash when finding nearest capital
- Fixed crash when processing character counters
- Fixed crash when processing ship mission
- Fixed rare crash when component definition cannot be found
- Fixed rare crash when changing empire of ship or base
- Fixed crash when rendering some scenes with weapon effects disabled
- Fixed rare crash when drawing colony badge

#### **ENGINE CHANGES**

- Upgraded to Stride 4.2.0.28 which now uses .Net 8

#### **PERFORMANCE**

- Utilized some new .NET 8 features to improve general performance
- Significantly improved performance when viewing Enemy Targets list
- General performance improvements

#### **GRAPHICS AND EFFECTS**

- Fixed bug where particle effects would often not be removed when complete (e.g. weapon muzzle flash)
- Fixed billboard texture arrays (weapon effects, etc) to always consolidate all individual textures into the same pixel format (BGRA instead of RGBA), thus removing need to color tint effects and thus improving appearance
- Extended weapon firing and chargeup effect logic to support more complex multi-part effects
- Extended weapon effect scaling to allow hull-conforming effects (scales with ship)

#### **MESSAGE SYSTEM**

*This update includes an overhaul of the message and notification system, focused on the addition of Message Centers and Galaxy Indicators to help especially with late game message volume and situational awareness. Further improvements to message handling will be in future updates.*

- Message Centers
  - You will now see 5 tabs relating to major message-type groups below the game menu UI: All Messages, General, Combat, Galaxy News, and Advisors. These are Message Centers, most of which will show you a sub-set of your available messages to allow for better focus when necessary. The All Messages tab will act as the messages did before, but with the addition of higher resolution message filters. We recommend starting with All Messages as your toggled message center, then switching to others when you need to reduce message spam.
  - Each message center stores its own set of message filter settings and all message centers have more filter options than in previous versions. There are also several filter presets for you to try out. The empire message filters are now available through the message log rather than the normal filters. Each message center also has its own message log, which shows messages based on the filters set in that message center.
  - In each message center, you will be able to see currently stored active messages. If you are not in All Messages, a number will overlay the message center button for any message center indicating the number of messages waiting for you.
  - Advisor messages will now only appear in All Messages or the Advisor message center. The Advisor message center does not have filters or a log. Also, if you have the advisors turned off in your policies, you should not be getting messages in the advisor message center.
  - Some message types which require player input, such as meeting a new empire, pirates, or story-related events, will continue operating as they have in the past regardless of your other choices.
- Galaxy Map Indicators
  - There are now enhanced map indicators for combat and plagues when viewing the galaxy.
  - When combat occurs in a system, or is about to occur, you will see a symbol indicating that there's combat occurring in the relevant system. Incoming enemy fleets will also be

more obvious now. The size of the combat symbol indicates the strength of the forces involved. You must have the fleet overlay enabled to see this additional combat visualization.

- For plagues, you will now see a highlighted plague icon hovering over a system indicating a currently active plague in that system.

*Please note that this notification overhaul should take effect on older saves; however, any currently displayed and active messages will not be found in the message centers. New messages should start accumulating in these centers. We still recommend you start a new game to use the system fully.*

*We have also added configurable key press options for each message category (currently set to None)*

### **COLONY PREVALENCE, SUITABILITY, ECONOMY REBALANCE**

*We've rebalanced these areas with the goal of improving scaling through the mid-game and late-game economies, to avoid situations where there is so much income that it effectively removes economic choices. We also wanted to address the issue of some factions having far more available suitable planets than others. The result overall should be fewer initially suitable planets for colonization, a better balance between factions, and terraforming which is initially less expensive, but may require ongoing maintenance.*

- Rebalanced planet quality levels to reduce number of suitable planets. While nearly all races have a reduced number of suitable colonies, this especially affects some races more, e.g. fewer for Mortalen, but an increase of suitable planets for Boskara (who were previously a bit starved)
- Reduced maximum population levels for colonies to about 63% of previous
- Reduced empire research output from colony population by 33% from previous
- Reduced suitability boosts from colonization techs
- Reduced Quality Improvement Amounts from Terraforming facilities
- Terraforming facilities can now only be built on colonies where base suitability is -10 or better
- Terraforming facilities must now be retained to keep Quality Improvement Amount when base suitability is below +20. If the Terraforming facility is removed/destroyed then the Quality Improvement Amount will be lost for colonies where base suitability is below +20
- Reworked colony quality and starting levels for colony population and development in pre-expanded empires
- Empire homeworld now starts with additional +10 suitability to assist with early-game income and growth
- Empire capital always has additional +10% colony corruption reduction bonus

### **COLONIZATION**

- Ensure clear internal colonization target for Colony Ship if colonization fails (avoid retrying with same target, e.g. when independent colony rejects colonization)
- Fixed Colony Ships sometimes getting stuck in population load/unload loop
- Now indicate when a colonization or outpost target has dangerous location effects (e.g. storm) in New Colonies list

### **TERRAFORMING**

- Fixed incorrect advisor suggestions to prematurely scrap Terraforming facilities
- Fixed tooltip for Terraforming facilities in Selection Panel incorrectly indicating that the facility must be retained to keep quality improvements when colony quality is above 20
- Fixed Terraforming facilities with Quality Improvement Amount so that cap total Quality at 100%, thus suggesting scrapping the expensive facility in all appropriate situations (e.g. when planet base quality + terraforming improvement would otherwise total more than 100%)

### **MIGRATION**

- Ensure criteria for Passenger Ship selection of migration source colony aligns precisely with load population command so that correct race is loaded for migration missions, especially when population policy for the race is Resettle now indicate when a colonization or outpost target has dangerous location effects (e.g. storm) in New Colonies list

### **FLEET ATTACK COORDINATION AND ENEMY TARGETS LIST**

*The Enemy Targets list and the Fleet AI logic has been completely overhauled, to the point that this is effectively a new feature. AI fleets are now much more intelligent about coordinating their*



*operations to make sure they can effectively prosecute wars. You also now have much more control over your possible fleet target orders at a high level and fleets are much more responsive to queued player targets.*

- Enemy Targets list now always contains ALL known targets (colonies + bases) of empires you are at war with
- Upgraded Enemy Targets list to allow queuing all attack mission types for a given target. These can now include Clear Defenses, Attack, Bombard, Invade, Raid, Capture, Blockade.
- Attack target queue buttons in Enemy Targets list are now more precise when evaluating available fleets for each attack mission type. Must have fleets within fuel and engagement range of the target, and these fleets must have adequate strength and troops for the target. Otherwise relevant button is disabled
- Added 'Queue Attack' action buttons under Selection Panel for all relevant attack mission types for selected target
- See tooltips in the Enemy Targets list section for additional information on how to set targets, attack points and staging points.
- Added Staging Points to attack targets, allowing multiple fleets to coordinate attacks on the same target
- Added Clear Staging Point option for attack targets
- Added Clear Attack Point option for fleets
- Altered fleet logic so that they consider queued attack targets before assigned fleet Attack Point, thus making fleets more responsive to manually-queued attack targets
- Empires now can also pick from their allies' enemy targets list and support attacks with their own fleets
- Automated invasion fleets may occasionally coordinate for multi-fleet attacks against well-defended colony (i.e. need more than one fleet to prevail). This may even include fleets from allied empires (Defense Treaty)
- Invasion fleets will now take on Capture missions against enemy bases when they have no other more important targets
- Ensure that fleets that are assigned an attack mission against a colony, base or fleet always show up in Enemy Targets list for that target
- Automated fleets now check empire bombardment policy when determining whether to bombard enemy colony from attack target (queued or not). This avoids situations where bombardment mission is assigned but fleet cancels mission when arrives at target
- Improved willingness of fleets to take on manually-queued attack targets even when have nearby threats (targets of opportunity)
- Individual ships in fleet no longer trigger investigate dangerous location missions, instead they leave these for the parent fleet to handle, thus improving the ability of fleets to select from queued targets
- Fixed invasion fleets being incorrectly assigned to invade colonies without adequate troops
- Fixed fleets sometimes not responding to attackers when have guard mission
- Improved automated fleet Attack Point selection to ensure not over-focusing on same enemy attack points
- Automated fleet attack assignment now gives more consideration to colony weapon facilities, planetary shields and fighter bases when determining whether to attack a colony, and how much strength will be required
- Manually assigned bombard missions will now attempt to bombard even when target colony has an impenetrable planetary shield, automated fleets will not attempt to bombard if they cannot penetrate the shield

#### **FLEET BEHAVIOR**

- Automated fleet management now properly includes fuel range as an important factor when determining which ships to add to fleet (attempt to avoid ships with low fuel ranges, which thus drag down fleet engagement range)
- Retreating fleets are now better at selecting escape point (extra checks for enemy threat strength at escape points), thus avoiding cycling retreats between two escape points in the same system
- Ships added to manually-controlled fleet now also set to manually-controlled (e.g. Topup Fleet) to

avoid corner cases behaviors this could otherwise cause

### **SHIP BEHAVIOR**

- Fixed ships sometimes getting very far above or below horizontal plane
- Improved jump pathing for ships in deep space (outside a system) so that more willing to take direct single-jump route to destination instead of first traveling to a system, even when direct route will pass through nebulae
- Improved jump exit coordinates for fleets so that better able to honor jump accuracy values for hyperdrives (i.e. do not jump directly on top of target)

### **BOARDING**

- Boarding assaults for ships and bases now progress much faster than previously and should generally resolve while the ships that launched them are still in the area
- Increased interval between launched for each assault pod when capturing or raiding. There are now separate values for launch rate for invasions and boarding. This should prevent frequent raids and boarding actions in short periods of time.

### **STARFIGHTERS**

- Fixed fighters sometimes not launching from carrier or base
- Fixed fighters at colonies often not able to land at colony, thus interfering with ship/colony selection

### **SHIP DESIGNS**

- Added new ScannerRange bonus to some ship hulls (Monitoring Stations, Medium + Large Spaceports); note that Monitoring Stations are now much better than any other station at long range detection
- Improved fuel range for auto-generated ship designs, more emphasis on fuel tanks

### **SHIP COMPONENTS**

- Adjustments to some component values (ranges of Tractor Beams and Long Range Scanners, small increase to crew levels in Crew Systems)

### **BOMBARDMENT**

- Damage to troops from bombardment now directly affected by their existing level of damage, i.e. as troops become more damaged (lower readiness) they take less damage from bombardment, thus making troops harder to completely eliminate via bombardment
- Colony facilities damaged by bombardment are now immediately deactivated (e.g. planetary shield, weapons)
- Colony bombardment now applies quality damage up to 20%, but with decreasing damage rate above 10%

### **GROUND COMBAT**

- Reduced rate of damage to planetary facilities and enemy troops from invading special forces troops
- Slowed rate of experience increase for invading special forces troops
- Fixed bug where invading special forces troops could sometimes be effectively invulnerable

### **WAR MISSIONS**

*This new feature activates whenever you are in a war. During war, your advisors will periodically suggest or assign War Missions for your empire which can help with your War Score and War Weariness as well as sometimes offering other rewards. These represent time-sensitive opportunities your military has identified for strategic benefits. In the Return of the Shakturi expansion, there are also additional unique Shakturi story-related War Missions.*

- War missions appear as advisor messages on recommended targets during war, with related rewards for completion of the mission
- Double-clicking on a war mission in the header bar will now move the view to the target
- War mission targets are at the top of Enemy Targets list (immediately below queued or assigned targets) and have a special target marker
- When a war ends, all war missions related to that war will also immediately expire
- Added separate automation setting for War Missions to Empire Policy screen.
- Automated setting will auto-assign war missions with a non-blocking notification message.
- Suggest settings will send advisor suggestion message which you can accept or decline.
- Manual setting will turn war missions off for your empire (none assigned or suggested)

- War missions can include the following types of tasks: research key tech, defend a base or colony for a specified time, destroy or capture an enemy base or flag ship, conquer a colony, sign a new treaty, capture a character, and many others
- War missions are introduced with a message when assigned, and show up in the header bar at the top of the screen
- War missions must be completed within a set time before they expire to gain the reward
- When completed, you receive a message outlining the rewards

### **WARSCORE**

- Extended War Tracking descriptions in header bar to show value of captured items (colonies, bases, etc) so that can more easily see change in war score when value of captured items change (e.g. bombarding captured colony)

### **PLAGUES**

*Plagues were not working as intended. Per the lore, the early galaxy should still have a great many challenges with plagues. These changes to how plagues work and the expanded Medical Research tree that accompanies them now mean that you should want to research Plague Curing and Plague Containment and build spaceports with medical facilities to transition away from serious plague outbreaks to a more healthy later game.*

- Rebalanced all plague values so that generally longer duration with lower virulence
- Random plague initiation now much more likely to happen on large colonies instead of smaller ones
- The intended answer for plagues is as follows:
  - Higher medical rating on the affected planet to reduce yearly losses
  - Higher Plague Curing to increase the chance of an early cure (if cured, the cure will immediately apply to all of your planets)
  - Higher Plague Containment to reduce the chance of spread to additional planets. Building the Advanced Medicomplex is a good idea if you are being hit hard by plagues.
- Now have plague curing difficulty per plague, so some plagues are typically harder to cure and will often completely run their course unless you have researched plague curing mechanisms
- Fixed bug where plagues could prematurely end at colonies. However note that medical facilities and plague curing and containment bonuses can shorten the expected duration of plagues
- Plague population loss rate shown for a colony in Selection Panel and Population screen now includes loss reduction from medical facilities at colony and all other factors; increase your medical rating to reduce the loss rate and hover over the plague icon with your mouse to see your early cure chance at each location
- Included minimum interval for plagues at the same colony in all cases, thus preventing colonies from experiencing plagues too often
- Fixed bug with plague initiation so that properly considers per-race plague factors
- Expanded the medical research tree to include more plague curing and containment bonuses as well as cures for all the common plagues
- Plague initiation chance is now also reduced by Plague Curing bonus (empires with 100%+ Plague Curing for specific plague will not have them randomly start, though they can still spread to your empire from other empires)

### **GALAXY GENERATION**

- Improved distribution of starting locations for empires in new galaxies
- Improved galaxy generation for pre-expanded empires so that have more realistic starting situation: more exploration, more mining stations and civilian ships
- Reduced the suitability and increased the damage on many of the “ancient” worlds now in storm-wracked systems; these can be repaired to be more suitable but given all they have been through will never be the most suitable worlds

### **EXPLORATION**

- Fixed bug where exploration ships could sometimes get stuck attempting to investigate ruins with special game event conditions
- Ensure Exploration ships explore map pings or investigate ruins with triggerable game events even when in another empire's territory and do not have Exploration Treaty
- Fixed missing map pings when hovering over messages

## **DIPLOMACY**

- Now always exclude empire capital from colonies that empire may be willing to trade, even when in another faction's territory
- Ensure empire that rejects alliance peace offer always sends a response explaining rejection
- Fixed First Contact Wars sometimes starting when empires are too far away from each other for viable war
- Increased decay rate for general negative incidents (i.e. unclassified types: 'General Incidents'), e.g. Gizurean Scouring of conquered colonies

## **ESPIONAGE**

- New intelligence mission types:
- Defect Character: switch a character from another empire to your own. Must know the target character's location
- Destroy Facility: destroy an enemy planetary facility. Must know about the target planet and facility
- Reduced acceptable difficulty level for intelligence missions based on empire policy settings for Intelligence Mission Caution. Default level is now 70% instead of 80%. This makes spies more willing to take on more difficult intelligence missions

## **RESEARCH**

- "All Research" bonuses have been made smaller and more rare across the board
- Fixed some research projects being incorrectly accessible earlier than they should be due to various reasons
- Reduced research breakthroughs from salvage

## **CHARACTERS**

- Reduced frequency of All Research character bonus
- Altered how Ultra Genius character trait is applied: now uses diminishing returns so that each additional character with the trait adds half the bonus amount of the previous character
- Removed Damage Control skill bonus from characters to minimize chance of excessively high damage reduction in an empire
- Colony invasions now properly apply character bonuses with diminishing returns for both attacking and defending sides (each additional general adds half bonuses of previous)

## **FACILITIES**

- Manually upgrading planetary facilities no longer honors reserved spending (e.g. saving up money for colony ship) thus fixing situations where players could not upgrade and did not understand why
- Added additional planetary defense facility projects across TL3, providing earlier access to planetary defenses
- Planetary defense facilities, especially when combined with planetary shields, are now quite effective as part of an overall planetary defense strategy
- Most troop recruitment facilities now also have a colony defense bonus
- Added Bombardment Resistance value to all planetary facilities, allowing modification of damage to the facility from bombardment
- Added Ground Attack Resistance value to all planetary facilities, allowing modification of damage to the facility from enemy troops during invasions
- Ensure non-Ruin facilities are removed from colony when wiped out
- Increased location strength evaluation of colony weapon facilities because these are harder to destroy than ships or bases
- Planetary defense weapon facilities will now properly attack pirates, the Hive, and any other unusual threats
- Terraforming facilities now have the same build and maintenance cost for all levels
- Typo correction to set the FacilityFamilyLevel properly for the Planetary Shield Generator Mk2

## **SENSORS**

- Long Range scanners have longer range than they did previously. Combined with the new scanner range bonuses for Monitoring Stations, this means you can have much better sensor coverage earlier than before

## **NATURAL DISASTERS**

- Natural disasters were boosted a bit in terms of quality and population damage and are a bit more

common on less hospitable worlds like desert, ice and volcanic.

### **SPACE CREATURES**

- Gravillex and Ardilus Space Creatures have been slightly buffed.

### **PIRATES**

- Improved handling of Outlaw ships (firing on another empire when not at war) so that ships and bases do not attack each other when not meant to

### **ARTIFACTS**

- Fixed Artifacts sometimes not showing up at their designated location (e.g. colony)

### **AI IMPROVEMENTS**

- Fixed bug where construction ships would sometimes get stuck trying to build bases at black holes
- Prevent AI empires from attempting to repair special abandoned ships that are unrepairable
- Fixed bug with planetary facility construction automation settings when set to Suggest (was instead automatically building facilities without player approval)
- Improved troop transport behavior to be better at reinforcing colonies/outposts with defensive garrison troops
- Slightly increased number of Exploration Ships that automated construction will build
- Adjusted automated research project selection to more heavily prioritize the following projects: exploration and survey scanners, colonization techs, governance facilities

### **UI IMPROVEMENTS**

- Added a new separate Combat overlay: shows system combat markers, turns off civilian ship symbols, fades other map elements
- Ensure Fleet Overlay enabled by default, note that Fleet Overlay also shows Combat markers in galaxy view (like Combat Overlay) but does not fade out other map elements
- Hovering mouse over header bar items that have related galaxy locations (e.g. planets, bases, etc) pings their location on galaxy map. This is in addition to existing behavior where you can click to select these locations. This expanded hover behavior specifically applies to war missions and colony events
- Now indicate critical resource shortages for a resource when very low excess supply at spaceports (not available to meet demand throughout empire)
- Now immediately refresh resource cargo capacities in Resource Stocks screen for colonies (never -1)
- Can no longer close message dialog screen using Escape key when message requires a user response
- Reworked button layout in top-right
- Ensure Exploration Ship is at same location as ruins before giving right-click popup menu option to 'Investigate Ruins'
- Improved right-click popup ship mission assignment menu to properly include/exclude manual ruins investigation based on whether contained events can be triggered by player (based on event conditions)

### **NOTIFICATIONS**

- Fixed missing text for successful raid against a base
- Fixed Advisor Suggestion display in Message List for Build Facility messages to properly show red cross icon for 'Suggest and Wait' setting

### **POLICIES**

- Added new policy settings to control when ships and fleets use bombardment. See Empire Policy screen, Military section for details
- Added more fine-grained automation settings for planetary facility construction and upgrades. See Empire Policy screen, Colonies section for details
- Added new Bombard policy options: Eliminate Enemy Troops And Facilities, Eliminate Colony
- Lowered the default population threshold for building small spaceports at colonies (empire policy)

### **GALACTOPEDIA**

- Added new Galactopedia topics for Outposts and Alliances

### **MODDING SUPPORT**

- Return of Harmony support for modding with version 2.3.3, which supports .Net 8
- Added new Game Event Condition types: CheckEventNotTriggered, AllianceExists, AllianceNotExists
- Added some new Game Event Location Hints: VeryNearbySystem, NearbySystem, MediumSystem, DistantSystem. These work exactly the same way as their 'EmptySystem' counterparts (NearbyEmptySystem, etc), but do not require the system to be empty
- Added Bombardment Resistance value for planetary facilities
- Added Ground Attack Resistance value for planetary facilities

#### **LOCALIZATION SUPPORT**

- Added Chinese font bundle to game (may need further work to reenable Chinese text)
- Combined with the fix for Harmony support, we expect this will allow many localization mods that previously worked to work again

#### **FACTION UPDATES**

- Ensure Human New Worlds events from colony conquest or colonization no longer give Colonization research breakthroughs beyond tech level 4
- Adjusted some incorrect values in Path of the Ancients and Way of the Ancients governments

#### **IKKURO AND DHAYUT DLC**

- Updated missing assault pod launch rate values for Ikkuro Splinter Pod component, thus fixing some Boarding/Raid issues

#### **QUAMENO AND GIZUREAN DLC**

- Fixed Quameno Integration Studies event so that values in tooltip properly reflect ratio of unassimilated population in your empire
- Fixed display bug with Quameno Integration Studies event so that properly includes correct ratio of unassimilated population when showing penalty value (was previously applying the correct value, but was displaying full value in tooltip)
- Reduced amounts of tech progress from Gizurean Waste Nothing event so that fewer research breakthroughs
- Reduced quality of Gizurean event planet 'Nazareno' so that not so desirable
- Fixed Facility Family Levels of Fighter Bases to account for a situation where a non-Gizurean player steals Gizurean fighter base techs at an early tech level

### **v1.2.2.0 “Game Faction” – 3<sup>rd</sup> April 2024**

*The Game Faction Update marks the beginning of updating the base game factions to a similar gameplay level as the new factions added in the post-release DLCs. This update includes a refresh of the Human and Mortalen factions as well as many other changes, including improved border graphics and a new visualization for Fleet Engagement ranges. Future updates will cover the remaining base game factions until all are refreshed.*

*Please note that data and game event fixes will only apply when starting a new game.*

#### **CRASH FIXES**

- Fixed crash when calculating total facility maintenance
- Fixed crash when changing empire relation
- Fixed crash when switching empire in game editor
- Fixed a number of crashes in Stride rendering engine
- Fixed crash when resolving tradeable items
- Fixed crash when editing Build Order items
- Fixed crash when fleet evaluates whether can handle nebula location effects
- Fixed crash when determining items at screen point
- Fixed crashes when destroying ship
- Fixed crash when fulfilling resource order
- Fixed rare crash when finding nebula jump path
- Fixed rare crash when calculating bonuses for planet
- Fixed various threading related crashes when many planet destroyers simultaneously destroying same planet

- Fixed crash when determining empire mining targets
- Fixed crash with Population Awoken ruins event
- Fixed crash when viewing New Colonies list
- Fixed rare crashes when rendering the main view

#### **SAVE GAMES**

- Now detect and warn when attempt to load corrupt savegame files

#### **PERFORMANCE**

- Minor performance improvements, especially in large late-game galaxies

#### **RENDERING**

- Added new settings for tweaking scene in GraphicsSettings\_Location.xml: DirectionLightIntensity, AmbientLightIntensity, SkyboxLightIntensity
- Increased default Skybox lighting intensity to improve appearance of ship materials
- Long range scanner map overlay now influenced by galaxy map opacity setting (more transparent by default)

#### **GAME SPEED**

- We recommend only using x8 speed sparingly, as it can be too easy to miss important notifications otherwise.
- Added new x8 and x1/8 game speed controls.

#### **BASE FACTION AND GOVERNMENT REFRESH**

*This update includes a refresh of the Human and Mortalen base game factions as well as all the base game government types. A summary of changes is below, but for the full information, please read through the in-game faction and government descriptions carefully. There are also new event illustrations and loading screens to go along with these changes.*

#### **FACTION CHANGES**

##### **HUMAN FACTION CHANGES**

- Slightly more aggressive
- Slightly better Continental suitability
- New Worlds: When you colonize or conquer a Continental planet obtain a free random Colonization tech advance (once per planet)
- Great Art Exposition: When you sign a Free Trade Agreement or build a new Resort Base obtain a 2 year boost to Trade and Tourism income throughout your empire along with a boost to Colony income and Tourism for the colony where the Great Art Exposition is held. Cannot trigger more than once every 5 years
- Hero of the Hour: When war is declared on you choose either a new Admiral or new General with two positive traits
- Internal Debates: When you sign a new Defense treaty obtain a capable new Ambassador but also a 2 year decrease to Colony Happiness throughout your empire
- Heightened Security: When a foreign intelligence mission against you succeeds (but is detected) you may choose to spend a Spy to gain a 2 year +20% boost to Counter Espionage along with a small decrease to Colony Happiness throughout your empire
- Large Carriers: all Carrier ship hulls +50 size
- New unique Leader, Ambassador, Scientist, Spy character traits
- Expanded unique tech trees which are accessible earlier in the research tree
- Humans no longer have access to Improved Defense Missiles and later. Bulwark Missiles replace these.
- Humans no longer have access to Rapid Fire Projectiles and later. Hail Cannons replace these.
- Humans no longer have access to Light Interceptors, Tactical Interceptors and Long Range Interceptors. Gyrfalcon Interceptors replace these.
- New Foundation for Galactic Cooperation unique facility with the following bonuses: +10% Diplomacy, +5% Espionage, +5% PsyOps, +10% Concealment, +10% Trade Income
- Changed Human default preferred intercept weapon family to Missiles (was Rail Guns)
- Victory condition tweaks and fixes

##### **MORTALEN FACTION CHANGES**

- Improved Armor Research

- Improved Ship Maneuvering and Troop Recovery
- Improved Troop experience gain
- Warrior Wave: When you declare war obtain a 2 year boost to Mortalen Population Growth along with your choice of either a large Troop Recruitment Rate boost or a Troop Attack Strength boost
- Patriotic Wave: When war is declared on you obtain a 2 year boost to Mortalen Population Growth along with your choice of either Colony Corruption Reduction or War Weariness Reduction
- Know Your Enemy: When you invade and conquer an enemy world choose a 2 year boost to either Espionage and Counter Espionage or Targeting and Countermeasures
- Prove Yourself: Periodically choose between 2 characters (from Leader, Admirals, Generals) to undergo a trial by arms. If successful (probable) the selected character gains a positive trait, otherwise a negative trait
- Reinforced Hulls: all ship and spaceport hulls have +1 Reactive Armor rating
- New unique Leader, Admiral, General, Ambassador character traits
- Expanded unique tech trees which are accessible earlier in the research tree
- Added new Unique Block Armor techs
- Victory condition tweaks and fixes

### **ZENOX FACTION CHANGES**

- Changed Zenox default preferred Shield focus to Recharge Rate (was Strength)

### **GOVERNMENT CHANGES**

- Republic: Gain +1%/+2%/+3% Colony Income for each active R/L/F Trade Treaty
- Democracy: 10% chance of a Positive Event (Tech Boost, Diplomacy Boost, Espionage Boost, Military Boost) every year, Every Leader Change results in each other character having a 10% chance of dismissal as a result of the shift in political fortunes
- Feudalism: Private Economy can build individual Feudal Escorts for its own Escort missions, Upgraded Planetary Militia fights like Infantry without upgrades, Troop Recruitment Rate x2 for 2 years after War declaration, Troops gain experience 25% faster
- Mercantile Guild: Control Mining Ships as if State Ships, Gain 1k/3k/5k trade income per year for each active R/L/F Trade Treaty
- Military Dictatorship: High Troop Presence reduces Colony Unhappiness by up to 5, Declare a "War World" to boost Colony Defense (+25%), Troop Recruitment, Ship Construction, Facility Construction (double rate) at any Planet/Spaceport for a 20k credit and happiness cost for two years.
- Monarchy: One ship can be designated a Flagship (+10% Targeting and Countermeasures, +10% Maneuver and Speed, +10% Damage Control), If Flagship destroys an enemy ship same size or larger generate +Happiness empire-wide event, If Flagship is destroyed generated -Happiness empire-wide event. All wars are considered Justified for War Weariness purposes
- Technocracy: Increased Character Quality +20% for all types, Increased Character Recruitment Chance +40% for all types
- Hive Mind: Jump Accuracy bonus at friendly locations doubled, Population Growth Rate x1.5 while at War

### **FLEET AND SHIP BEHAVIORS**

*We added additional Fleet Engagement ranges and a new map overlay for engagement range visualization to help you plan your fleet home bases, engagement ranges and targets.*

- Added Fleet Engagement Areas as galaxy map overlay (shows circles of engagement centered on Home Base, and travel paths to Attack Points)
- Added extra fleet map overlay settings: Selected Fleet. Only shows engagement range and attack vector for player's selected fleet. Also Defense Fleets, Attack Fleets, Raid Fleets, Invasion Fleets only show engagement ranges for fleets of those types.
- Renamed Fleet Engagement Range 'Sector Range' to '100M range'
- Added new Fleet Engagement Ranges: 50M range, 200M range, 300M range
- Altered colors for fleet roles and attack point vectors in fleet engagement area map overlay so that better distinguished from selected fleet/ship travel vector
- Lowered default engagement range for automated Defense fleets (Fleet Templates)
- Individual fleet ships will now attack threats at same location even when rest of fleet is not nearby



and cannot upgrade attack to a fleet mission. However this still requires all other engagement criteria to be met (range, etc)

- Automated fleets now also check distance of target from fleet home base when evaluating whether to break off attack (fleet may be outside normal engagement area)
- Ensure manually assigning a Guard mission to a fleet properly changes fleet role to Manual (not just ships)
- Fleets now more willing to wait for Fuel Tankers when nearest refuelling point is outside current fuel range
- Improved willingness of Fuel Tankers to refuel fleet ships outside systems
- Ensure that Fuel Tankers do not improperly assign refuelling mission for ships that don't really need refuelling (avoid cycle of assign/cancel mission)
- Ensure refuelling point selection always excludes nebula locations when ship cannot handle effects
- Improved automated fleets honoring engagement range when far away from home base (not investigating dangerous locations outside engagement area)
- Improved Fleet movement within nebula so that more likely to take direct single jumps to destinations when moving to coordinates instead of specific target

#### **SHIP BEHAVIOR**

- Fixed bug where military ships with escort mission would sometimes not show travel vector
- Fixed bug where freighters were sometimes not being utilized effectively

#### **PATHFINDING**

- Jump pathing now more willing to consider alternate paths that may be shorter
- Jump pathing will now take direct single jump route when either source or destination is in a nebula and the total time of the direct jump is less than the alternate route that uses the nearest system to the nebula

#### **SHIP DESIGNS**

- Fixed auto-generated ship designs sometimes selecting sub-optimal reactor components
- Improved ship auto-design for exploration ships and construction ships so that weapons deprioritized in favor of other components (reactors, fuel, etc)
- Improved ship auto-design when have in-system hyperdrive (i.e. Skip Drive) so that have adequate reactors and not too many fuel cells
- Tweaked weapon component selection for auto-generated ship designs so that not inappropriately skewed by preferred components

#### **EMPIRE BORDERS**

- Where the borders of two empires meet, we have added a more visible border in the galaxy view to help make it easier to distinguish their territories.

#### **USER INTERFACE**

- Selection Panel will now auto-grow vertically to accommodate any overflow content
- Control Center will now auto-expand to use the full vertical space when Selection Panel is empty
- Added configurable Galaxy Map opacity settings, allowing fade of most galaxy map elements and better visual focus on other items. Separate setting for when Fleet Overlay is enabled, further allowing better visual focus on Fleet engagement areas
- Now always include a 'Scuttle Ship' command in the right-click pop-up menu for any state-owned ships without a mission and no functional hyperdrive
- When end war with another empire ensure that enemy targets of that empire (queued and non-queued) are properly cleared
- Improved tooltip for colony events in Selection Panel and header bar (image + more detail)
- Character traits or skills added through game events now also add event log entry for character (e.g. Prove Yourself Mortalen event)
- Fixed small asteroids sometimes not able to be selected at a location
- Fixed bug with some scenes where cannot click on item under mouse (wrong item selected)
- Added Fleet Attack Point as distinct line item (under Home Base) for Fleets in Selection Panel
- Fixed late messages for plagues ending at colonies
- Fixed Selection Panel stretching too high when selecting multiple troops

- Tidied up display of hovered victory condition details to have correct height

#### **COLONIZATION AND COLONIES**

- Fixed Colony ships sometimes repeatedly loading/unloading population when only viable colonization target is independent colony that is not yet at desired colonization success chance
- Fixed Colony Ships sometimes loading/unloading colonists perpetually (extend load colonist check to include colonization range limits)
- Ensure that queued colonization targets properly removed when new colony established at target
- Fixed independent colonies sometimes not showing colonization success chance
- Ensure rebelling colonies always eventually resolve to normal after rebellion battle completes
- Empire colonization targets are immediately reviewed upon acquisition of a Colony Ship (e.g. Refugee Fleet event) thus allowing new colony ship to immediately undertake colonization mission for a suitable target

#### **PIRATES**

- Fixed pirates sometimes having very high tech when start game with only one standard empire (player only)
- Ensure pirate faction properly eliminated when capture last base

#### **RESEARCH**

- Fixed bug where research project time to completion could sometimes be shorter than expected
- Fixed tech bonuses from raids sometimes giving negative progress in current research project

#### **CHARACTERS**

- Ensure time for characters to transfer to new location is not too long when currently only have very slow hyperdrive tech (e.g. Skip Drive)
- Improved character handling when conquer capital colony of another empire and policy setting for 'Characters at Conquered Colonies or Bases' is 'Return Home' (return character to another non-capital colony)
- Fixed display bug for character handling policy setting 'Return Home'
- Removed Non-Technical from list of positive character traits

#### **DIPLOMACY**

- War score is now a more significant factor in determining willingness to end a war, i.e. losing side pays more attention to their losses when considering whether to end a war, and whether to offer vassalization to end the war
- Added gradually increasing trade bonus level to diplomatic relations when have trade treaty. Bonus income to all resources sold to other empire, up to maximum of 30% when have Free Trade Agreement
- Fixed bombard diplomatic incidents and reputation impact not being properly applied when bombarding independent colonies

#### **WAR RESOLUTION**

- Improved Empire teardown when last colony lost so that no remaining ships, characters or fleets for the empire
- Fixed empires not being properly removed when lose last colony if they did not have a government

#### **GROUND COMBAT**

- Troop Attack Strength bonus type now properly applied from both invading generals and invading empire when attacking colony

#### **GALAXY GENERATION**

- Improved galaxy generation so that star systems less likely to generate near another system

#### **POPULATION POLICIES**

- Ensure that automated colony population policy does not set most suitable race already at colony to Resettle even when its suitability is below colonization minimum, i.e. always keep most suitable race for colony

#### **PIRATES**

- Ensure non-standard pirate factions without spaceports are not improperly eliminated when one of their bases is destroyed but they still have other bases

#### **VICTORY CONDITIONS**

- Fixed Highest Trade Income victory condition to properly account for all trade income (applies to

- Human, Teekan, Haakonish)
- Increased default victory condition threshold back to 70%

#### **MODDING SUPPORT**

- Added texture header checks for flag filenames (avoids gaps in flag selection dropdown with some modded images)
- Modded flag images now properly also select empire color from flag

#### **DATA CHANGES**

Updated data files to fix the following:

- Human and Mortalen updated race descriptions updated
- Various weapons with no intercept capability have had redundant intercept values removed
- Resource costs rechecked
- Inconsistent increases/decreases in damage or bonuses for components addressed
- Fighter weapon arcs made consistent at 90°
- Corrected the human Gyrfalcon Interceptor defense slots
- Added resource costs to the Hail Cannon [M] component
- A whole host of typos checked and fixed across the board

#### **GAME EVENTS**

- Ensure story game events always properly disabled when needed
- Tweaked Mortalen troop transport ruin game event to give more advanced Boskara diplomatic tech
- Improved 'Sleeping Alien Race Awoken' ruin event to add sleeping population to colony if already exists instead of generating a new colony

#### **QUAMENO AND GIZUREAN DLC**

- An overlapping tech project fixed for the Gizureans (same row as regular tech)

### **v1.2.0.5 “Stellar” – 13<sup>th</sup> February 2024**

*The “Stellar” update brings many major improvements for gameplay and game quality. One focus is on greatly reducing crashes and launch issues. It also significantly improves performance both in scenes and the galaxy simulation, improves pathfinding issues and further improves fleet and ship behavior beyond the “Fleet” update level. “Stellar” greatly expands the new policy system to provide player guidance for automated research and ship design priorities. It also adds a new measurement tool, improves the AI, fixes an issue with pirate tech progress, improves modding support and adds various balance and gameplay improvements for the recent DLC factions.*

#### **CRASH FIXES**

- Fixed crash with some game controllers
- Now properly extend path finding system time array when add new star system to galaxy (either via game editor or game event), thus resolving all of the IndexOutOfRangeException errors in various situations
- Fixed a possible crash on starting a new game
- If any 2D character animations fail to load, an entry will be written to the session log and a crash dump will be generated but the game will no longer crash
- Fixed rare crash when changing Steam overlay size during user interface rescaling
- Fixed crash when calculating population amount
- Fixed crash when drawing location badge
- Fixed crash when applying fleet tactical settings
- Fixed crash when removing star system in game editor
- Fixed crash when loading weapon billboard textures with faulty data
- Fixed crash when resolving empire color from flag image with faulty texture file
- Fixed crash when removing 'pinged' items from galaxy map
- Fixed crash when obtaining research project definition
- Fixed crash when determining scientists at research stations
- Fixed crash when getting resources at planet
- Fixed crash when ship reviews fleet escort position

- Fixed crash when reviewing colony events for main view header
- Fixed rare crash when performing research or making trade offer
- Fixed crash when retrofitting ship
- Fixed crash when determining research modifier with faulty mod data
- Fixed crash when drawing ship damage report
- Fixed crash when determining resource priorities
- Fixed crash when determining fleets to attack target
- Fixed crash when finding nearest neutral location
- Fixed crash when could not access SessionLog file
- Fixed crash when generating graphics node for missing planet
- Fixed several fleet-related crashes
- Fixed a possible crash on starting a new game
- Fixed crash when attempting to find the nearest unthreatened location for an empire
- Fixed crash when fleets check if they have an attack target
- Missing ship summary will no longer crash victory condition checks on loading a saved game
- Fixed a difficult to reproduce per-location weapon effects desync related crash

### **COMPATIBILITY AND LAUNCH ISSUES**

*Between the various crash fixes and compatibility/launch fixes, we hope this update will fully resolve any remaining rare "DW2 will not launch" issues.*

- Further improved support for HDR by hopefully insuring that Windows' AutoHDR is off and not interfering with DW2. If enabled, Auto-HDR could cause a crash on startup.
- If any 2D character animations fail to load, an entry will be written to the session log and a crash dump will be generated but the game will no longer crash

### **PERFORMANCE**

*The "Fleet" update had some performance regressions relative to the "Hyperspeed" update, partly because of the improved fleet and ship logic. This round of updates entirely resolves that performance regression and improves performance even further.*

- Major performance improvements for late-game and large galaxies (2000 stars)
- Extensive performance and memory optimizations, especially in very large battle scenes with many ships and fighters
- Reduced memory pressure in a number of ways, thus reducing .Net garbage collection pauses
- Path finding (and path timing) performance improvements
- Fixed an arbitrarily long delay on updates of explorer ships mission assignment because it doesn't need to grab a lock on pathing info anymore
- General performance improvements - locking is now cooperative
- Reduced memory garbage generation when operating on shared and indexed lists in general
- Reduced memory garbage generation when calculating stock levels
- Visibility system related performance improvements
- Rewrote lock-heavy 'nearby orb' check used by selection panel for in-system ships getting a background image
- Late game performance improvements (time reduction, partitioning) to economy and ship pathing systems

### **UI IMPROVEMENTS**

*The new measurement tool is the most exciting UI improvement in this update.*

- Added a new distance measurement ruler tool, to activate hold shift and left click, release left click but hold shift and drag
- Holding shift will also turn on distances in various hover info cards and mission descriptions
- Added summary of game starting situation to right of Load Game file screen (click on a savegame in the list to see a preview summary of the game before loading)
- Select Ship Hull screen now includes fighters when filter is set to 'State Ships' (creating a new ship design)
- Minimum and maximum effect rate sliders added to options menu (set both to 1.0 for always pretty effects)
- Fixed missing ship and base symbols at location zoom level

- Clicking on item in message list view (at screen far right) now more often opens related screen, e.g. clicking on completed spy mission will open the spy detail screen, ready to assign a new mission
- Updated Hint text for hotkeys to properly indicate using Ctrl-# instead of Shift-#
- Fixed instances where single ship was sometimes the only selectable item when zoomed into location view

### **PATHFINDING**

*We've resolved the most commonly reported pathfinding issues in this update. Note that pathfinding still strongly prefers using systems as waypoints and this is intended, but we plan to revisit this to add more support for deep space waypoints in the future (though at some cost).*

- Improved jump pathfinding when start or end point of journey is in deep space (outside system): skip unnecessary systems at start or end of path to minimize number of jumps
- Improved jump path finding so that less likely to have very long indirect paths to destination unless no other route. Now also more willing to plot path that passes through nebulae when required

### **FLEETS AND FLEET BEHAVIOR**

*We've continued improving Fleet and Ship behavior, based on feedback after the release of the "Fleet" update. We hope this update will address all remaining issues. Please note that many reports we get on fleet and ship behavior are still because of player tactical and policy settings conflicting with their expectations— please check and understand those first to make sure your fleets and ships do what you would like.*

- Extended functionality of Fleet Topup action button so that will now build new ships of up/downgraded roles for missing ships (from fleet template) when cannot build ships of higher roles (no hull/design). But only when fleet template has 'Ship Role Up/Downgrade' enabled and the template items do not designate a specific design (i.e. any design for hull or role)
- Fleets are now more careful to check whether first need refuelling before returning to home base
- Improved fleets attempting to avoid risky attacks against stronger targets when other strong fleets already assigned to target
- Improved fleet coordination with fuel tankers for refuelling in various edge cases
- Fleets now better at maintaining cohesion when attack target jumps away and fleet ships attempt to track jump (fleet tracks jump as whole and all ships either succeed or fail with tracking). This avoids lone fleet ships attacking target while rest of fleet fails to jump
- Fleets moving to non-specific destination (i.e. galactic coordinates instead of specific planet/base/etc) will now jump directly to destination when within jump range and not passing through nebula
- Fixed fleets sometimes continuing attack mission against target after becomes part of their empire
- No longer disable retrofit fleet button when construction yard wait queue is too long (but include warning in button tooltip)
- Fixed fleet topup button sometimes not working properly
- Rebalanced automated fleet creation, now allow more fleets overall and more defense fleets
- Tweaked how automated fleet home bases and attack points are selected so that empire has better offensive and defensive posture
- Improved fleet topup so that distant ships are better at travelling to fleet location and then joining the fleet
- Fixed fleets sometimes incorrectly overriding engagement range to attack dangerous locations when they are in the same system as the fleet
- Invasion support fleets (Attack, Raid) will now take on other targets when arrive at enemy colony but have no invasion capability and invasion has not yet begun (invasion fleet has not yet arrived), i.e. will not keep reassigning pointless mission against fleet Attack Point
- Improved Invasion fleet willingness to invade other enemy colonies when not enough troops to prevail against main designated Attack Point

### **SHIP BEHAVIOR**

- Ships with low accuracy hyperdrives (e.g. Skip Drive) now more willing to perform short-range jumps to destinations within same location
- Fixed ships sometimes getting stuck picking up debris when many other nearby ships
- Fixed bugs in recent changes with jump pathing (e.g. Exploration Ships sometimes not assigning

new missions)

## **RESEARCH AND SHIP DESIGN PREFERENCES**

*Continuing the work started last year to allow more guidance for automated Design and Research, we have now added a new Weapon and Component Focuses section to Empire Policy settings. If you are not handling Ship Design and Research manually, this will greatly help you in prioritizing the automation's choices and making sure your automated research and ship designs share the same priorities.*

- This new section consolidates pre-existing preferred weapon family settings with many new settings that allow fine-tuning how research and ship design work
- Note that the alternate preferred weapon family settings have been removed to streamline the user interface for this section (e.g. 'Preferred Close-In Weapon Family 2')
- Can now control the level of each weapon category and when they are used
- Also now allows tweaking focus for fighter bays, hyperdrives, reactors, shields and engines
- Note that each faction has their own unique policy settings in this area, further differentiating their ship designs and that race-specific technologies still carry additional weight in terms of the automation's choices
- Tweaked weapon component selection for research and design so that racial preferred weapon components and policy preferred weapon families work together better instead of conflicting, thus selecting the best weapon components for each category
- Ensure designs that are changed in the Ship Designer also immediately refresh the cached design data for all ships that use the design
- Improved automated ship design generation when specified ship hull has limited general bays, avoiding filling with unnecessary components when still missing reactors or other critical components. This is especially relevant with fighter hulls which may have very low general bay counts
- Fixed some component types not being able to be added to design component bays
- Fixed research project resolution to always properly retrieve by Id, not position, e.g. for event descriptions
- Reduced cost of diplomacy research projects

## **AI IMPROVEMENTS**

- tweaked AI determination of when empire is in economic shortfall (cashflow and cash on hand) and thus reduces ships and troops (when these are automated), i.e. less aggressive at disbanding ships and troops when economy cannot support to avoid overreaction to brief economic downturns

## **CONSTRUCTION**

- Improved order of automated military ship purchases so that try to evenly build ships for each role instead of focusing on largest roles first
- Ships and fighters no longer take nebula damage (standard or ion) while under construction/repair or inside a hangar

## **DIPLOMACY**

- Peace offer messages now properly show any additional demands in main body of text (i.e. incentives to end war)

## **COLONIES AND COLONIZATION**

- Fixed an issue affecting growth rate calculations. Colony populations now correctly calculate growth rates per race, so that less suitable races for the colony grow significantly slower (still affected by their base growth rate, funding and resources).
- Automated colony ships loaded with a population that has no suitable colonization targets (e.g. abandoned colony ships with unusual races) will now unload unsuitable race to allow loading another race with viable colonization targets

## **COLONY CONQUEST AND TECH ADVANCES**

- Colony conquest tech breakthroughs (both standard and via Gizurean Scouring event) now exclude research projects that are specifically excluded for conquering race (for example, Gizureans will not get heavy armor as their hex armor directly replaces that) but this still allows race-specific techs from other factions to potentially be recovered
- Prevent tech breakthroughs from conquered colonies when previous colony conquest was very

recent, i.e. no conquest tech unless conquest unhappiness from previous invasion has completely expired. This also applies to Gizurean Scouring event.

- Research project selection for colony conquest techs and tradeable techs now excludes projects that are not EnabledByDefault (unless specific to race), thus properly excluding story-related techs that should never have been part of these rewards
- Colony conquest no longer provides only partial progress to research projects. Will now always provide complete tech breakthroughs when it provides a reward
- Fixed colony troops sometimes mistakenly ending up on invading side

#### **WAR SCORE**

- Rebalanced values of bases so that war score is more realistic. Specifically: greatly reduced defensive base values, reduced spaceport values, increased research station and resort base values
- Fixed bug where troop destruction was being overcounted for war score

#### **PIRATES**

- Slow down rate of pirate tech progress to fix the issue in the Fleet update where pirate factions could end up increasing their tech level far too quickly
- Prevent pirate factions from salvaging tech from debris, which combined with the tech progress adjustment should fix the situation where pirates had started advancing in techs faster than empires
- Reduced starting tech level of Airless Wanderers pirate faction, which had accidentally been set too high

#### **GAME EDITOR**

- Game editor now allows removing debris and other small items at a location
- Game editor now allows removing abandoned ships and bases

#### **MODDING SUPPORT**

- Now include any additional flags from mods in player flag selection dropdown in Start New Game screen
- Added --skip-splash option to skip the splash screen to help power users and mod devs who find it annoying
- Added --new-game and --continue command line options for power users and mod devs
- Mods should be able to use suffixed GameText.txt (e.g. GameText\_\*.txt) files that append new entries without replacing the whole GameText.txt

#### **QUAMENO AND GIZUREAN DLC**

- Quameno "Integration Studies" event scaling changed to make it a significant penalty under typical circumstances.
- When triggered, the Quameno event 'A Piece of the Puzzle' now also adds a +10% population growth rate bonus to your empire for one year (in addition to the existing tech breakthrough)
- Gizurean "Waste Nothing" event was fixed to no longer prefer completing the current queued tech most of the time, but to function as intended, which means it will pick randomly from any more advanced techs on the retired/salvaged ship and only award tech boosts within those categories, not necessarily full techs. This will allow it to function as a good way to catch up tech-wise, but not as a way to race ahead.
- Gizurean "Scouring" event was fixed to function as intended, which means it will pick randomly from any more advanced techs on the conquered planet and only award new techs within those categories. If the planet's previous owner had no more advanced techs, Conquest and Scouring will not award techs. This will allow planetary conquest and Scouring to function as a good way to catch up tech-wise, but not as a way to race ahead.
- Gizurean "Tribal Conflict" event has a more significant happiness penalty.
- Fixed overlapping research projects in tech tree for "Study Degenerate Gizureans" and "Shakturi Design and Behaviour"

#### **IKKURO AND DHAYUT DLC**

- Minor fixups for Damazy story text
- Ikkuro "Secrets of Life" event adds additional population growth.
- Some minor changes to Damazy and also to the defense based around Kasim

### v1.1.8.1 – 13<sup>th</sup> November 2023

*The “Fleet” update includes many improvements across the game, but focuses most on the area of improving fleet and ship behaviour in almost every way. We’ve heard the feedback that there were still frustrations with how fleets and ships responded to certain circumstances, especially where manual orders and automation interact. We hope you will agree that this update is a major step forward in that regard, reducing player frustration and improving AI empires as well.*

**IMPORTANT NOTE: Among other important changes, this build changes how we build DW2 so that it should be more compatible with Linux/Proton, for those Distant Worlds fans who prefer to play DW2 on the latest Quameno-designed operating system. While Linux is not officially supported by DW2, this should make it quite possible to get it working. If you have been struggling with DW2 on your Linux systems, please give this build a try and let us know how it works for you!**

### CRASH FIXES

*We continue to address a variety of crashes. Most are not seen by the player as crashes, but can affect the background simulation and cause other strange effects. Our monitoring of such events indicates that we’ve been making consistent progress and that 1.1.8.1 is the most stable build to date.*

- Fixed crash when generating ship design name
- Fixed crash when ship unloads cargo
- Fixed crash when resolving default mission for hovered ship
- Fixed crash when cannot save game settings due to simultaneous file writes
- Fixed a number of Stride rendering crashes
- Fixed Selection Panel cycle item keypresses sometimes causing game to hang
- Fixed rare crash when calculating model scale
- Fixed rare crash when ship is picking up debris
- Fixed crash when updating use interface control tooltip positions
- Fixed rare crash when generating Hive ship
- Fixed crash when fuel tankers evaluate refuelling targets
- Fixed crash when assigning ship mission
- Fixed crashes relating to mining prioritization
- Fixed crash when rendering Message list
- Fixed crash when repairing ships
- Fixed a number of Stride rendering crashes

### COMPATIBILITY IMPROVEMENTS

- Upgraded DXVK rendering option to version 2.3

### PERFORMANCE IMPROVEMENTS

*While this section is short, we’ve improved performance significantly again compared to the Discovery update, especially in certain late game situations. We have more performance improvements coming in the next official update as well.*

- Fixed rendering issue in Selection Panel
- Significantly improved general performance, especially in larger games and late-game when there are many ships

### FLEET AND SHIP BEHAVIOR

*We had made many improvements to fleet and ship behaviour over time, but it became clear that we needed a deeper dive in this area to make sure we were able to fully resolve the remaining reported issues. This turned out to be a major endeavour which took two months of development time as we went through every fleet or ship behaviour-related issue in our backlog, but the result is fleets that behave much better for all manual/automated playstyle choices and also for the AI empires. The notes below explain in more detail all the significant changes, along with many minor tweaks and fixes.*

#### Fleet Movement

- Improved fleet Move To missions so that:
  1. Complete Move To mission in timely manner



2. Fleet ships move closer to target
  3. Fleet ships avoid colliding with one another and pushing each other off course
  4. Avoid excessive short-range jumps (especially when have hyperdrives with unusually low accuracy values)
- Fixed fleet ships so that can always rectify jumping inside planet, even when various edge-case factors could previously prevent this
  - Fleets assigned to refuel and repair will now consider ships with damaged components to also need repair (not just destroyed components)

#### **Fleet and Ship Engagement**

- Ships in fleets with Prepare and Attack missions now immediately begin their attack against the specified enemy target when the target is at the waypoint location and is already attacking any other ship in the fleet
- Fixed fleets sometimes attacking targets beyond their engagement range
- Fleets and military ships now better at breaking off attacks against enemy fleets that jump away and are thus now beyond their specified engagement range
- Ships now determine optimal attack range by including ranges from all of their weapons (ion, intercept, area, etc) when have no main weapon types (standoff or close-in)
- Military ships in fleets are now more careful in threat evaluation when determining whether to upgrade attack mission against a target to use their entire fleet to ensure they always honour their fleet engagement range
- Fleets can now only assign Capture missions when at least one of their ships has current active assault pod availability
- Ships are now better at retaining their Capture mission when other ships at the location have current assault pod availability but they do not - further improvements to Capture mechanics are coming in a future update.

#### **Fleets and Enemy Target Assignment**

- Fleets auto-assigning attacks against queued enemy targets now consider targets in queue order, instead of proximity to fleet, this will make fleets more responsive to player queued targets
- Fleets auto-assigning attacks against enemy targets (queued and non-queued) now make extra considerations for refuelling on way to target, thus extending their attack range
- Improved fleet willingness to persist with attacks against defined attack point instead of getting unnecessarily distracted with other targets
- Fixed edge case where ships and fleets were sometimes assigning futile attack missions against targets that were in hyperspace and were too hard to intercept
- Improved willingness of manually assigned fleets and military ships to stick to current attack target (instead of switching to other target), thus improving ability to focus fire on enemy targets
- Prevent individual fleet ships sometimes recklessly attacking targets that are too strong for them to handle
- Improved fleet retreat evaluation - no longer prematurely break off attack while en route to target. Will also consider other nearby fleets en route to same location
- Automated fleets will now always remain at their current location to defend if an incoming enemy fleet is detected for that location
- Now properly handle threat evaluation at deep-space locations outside systems so that enemies more likely to attack each other
- Improved accuracy of range calculation when fleets evaluate whether to attack target, thus more likely to attack
- Changed Defence Fleet behaviour so that will now defend locations within range even when system is not part of empire territory (e.g. base outside territory)
- Ensure automated fleets only investigate dangerous locations when have targets that they could conceivably attack (i.e. are enemy or unknown)

#### **Invasion Fleets**

- Improved invasion fleet evaluation of defending strength when at target colony, will wait until other attack fleets clear target if necessary
- Troop transports in a fleet will now hold off loading further troops once they have adequate troops to invade their target colony (attack point). This makes invasion fleets more generally responsive

- and available for invasions, especially when have troop transports with large troop capacities
- Troop transports in a fleet no longer unload troops at vulnerable frontier colonies, but instead focus on loading adequate troops for their invasion target. However troop transports which are not in a fleet will still ferry troops to vulnerable colonies to fulfil army template requirements
- Improved accuracy of enemy strength evaluation at invasion target so that invasion fleets more likely to invade colonies
- Automated troop transports bringing reinforcements to invaded colonies will now cancel their mission as soon as the colony is conquered (instead of continuing on to the colony). Alternatively, if they assess that they might be able to retake the colony with their own invasion, will instead change their Unload Troops mission to Attack the conquered colony

#### **Fleet Formation and Organization**

- Improved Fleet Top-up function so that trim correct number of excess ships based on fleet template (when 'Trim Excess Ships' is enabled)
- Improved fleet lead ship selection so that more focused on ships in main body of fleet
- Lead ships for fleets are now always selected as strongest ship at location with majority of fleet ships, i.e. try to avoid changing geographical fleet centre when changing lead ship
- Improved ability of newly-added fleet ships to move to fleet location
- Properly review and clear all relevant fleet escort data when a ship leaves it's fleet (fleet ships avoid escorting ships that have left the fleet)

#### **Fleets and Capturing and Raiding**

- Ships in fleets with Capture missions now check for incoming fleet ships with assault pods (not yet at location) before completing mission due to lack of assault strength
- Successful raids on research stations or other bases now better at falling back to money bonuses if target empire has no research projects to loot that raiding empire has not already researched

#### **FUEL TANKERS**

*There were still reported issues relating to fuel tanker behaviour, both as it relates to fleets and for individual fuel tankers. We also went through all those issues to make sure tankers are a more useful addition to your forces.*

- Fuel tankers in fleets now attempt to retrofit at the same time as their fleet to maximize their availability
- Fuel tankers will now attempt to first completely refuel their fleet prior to retrofitting
- When fleet fuel tankers are distant from fleet ships, prior to refuelling a fleet ship they will now check whether another fuel tanker for same fleet is closer than them and can handle refuelling in more timely manner
- Improved fuel tanker ability to avoid dangerous locations when accompanying fleets
- Fuel tankers no longer attempt to refuel ships with any kind of attack mission
- Fixed fuel tankers sometimes not loading fuel when empty

#### **DANGEROUS LOCATIONS**

*There were cases remaining where some ships did not handle dangerous locations well. This update should resolve all of those cases.*

- Ensure dangerous locations exclude threats that are not really dangerous, e.g. bases from unfriendly factions that are not currently at war with
- Freighters no longer attempt to fulfil resource orders from dangerous locations (e.g. Kasim)
- Passenger ships always exclude dangerous locations when assigning migration or tourism missions

#### **CONQUEST AND CAPTURE**

*In certain cases, the empire logic would not update its knowledge quickly enough after a new world or mining stations was captured, leading the invading/attacking fleets and ships to have a long trip back to another location to refuel when they should have refuelled on the spot. By forcing an update of the empire logic when such events happen, we should no longer see that issue.*

- Now immediately review refuelling, repair and construction locations when conquer colony so that any ships or fleets can immediately refuel or repair there
- Now immediately review refuelling, repair and construction locations when capture fuel mining station or spaceport so that any ships or fleets can immediately refuel or repair there

#### **STARFIGHTERS**

- Fixed fighters sometimes not properly landing at colonies (planetary fighter bases)

## **UI IMPROVEMENTS**

*We've included a number of UI improvements related to ship and fleet and ship design management as well as the management of troops on colonies to reduce frustration especially for those using more manual play options.*

- Now allow ship multi-select in most Civilian lists: All Civilian Ships, Freighters, Passenger Ships. This means can multi-select any ships in list using shift- and ctrl-click and then mass-scuttle using the Scuttle button under the Selection Panel
- Selection Panel now shows more comprehensive information on current Assault Pod strength for selected ships (when has assault pods) and fleets, thus helping to determine when a fleet or ship can undertake a raid or capture mission
- Improved display of current assault strength in Selection Panel when ship is attempting to capture an enemy target
- Manually upgrading a design will now automatically disable Auto-Upgrading for that ship hull
- Manually setting troop garrisons will now automatically disable auto-garrison for the colony
- Fixed cycle next/previous key-presses sometimes not moving to next item (cycle colonies, cycle exploration ships, etc)
- Selected ship or fleet no longer unintentionally receives mission assignment when right-click on navigation panel in Research Screen (click through issue)

## **MESSAGES AND NOTIFICATIONS**

- Fixed messages sometimes being prematurely expired because other filtered messages were being included in calculation of remaining screen height. This should resolve the sudden notification stack wipe issue.
- Fixed some premature message notifications about Hive fleet sightings

## **SHIP DESIGN**

- Added explanatory tooltip to Load Designs button, outlining how this works
- Fixed Load Designs button often not loading designs even when meet tech requirements of current game

## **EXPLORATION SHIPS**

- Fixed exploration ships sometimes waiting near sleeping Hive ships without reassigning missions

## **PIRATES**

- Fixed multiple messages when pirate faction destroyed
- Fixed pirate ships acquired from destroyed pirate factions sometimes then switching to other pirate factions

## **TROOPS**

- Automated troop recruitment now focuses on recruiting one troop at a time on a given world, completing recruitment of any existing troop before queuing a new one, thus minimizing costs

## **EXPLORATION**

- System map info from salvage now properly explores all locations in system to at least level 1

## **DIPLOMACY**

- Fixed defeated empires sometimes being included when honouring defence treaties
- Fixed some faulty requests to honour defence treaties when already at war with attacking empire

## **RESEARCH**

- Fixed repeatable tech research for planetary facilities and ship hulls only applying most recent repeatable tech changes
- Further tweaked research priorities for automated research so that AI factions are better able to pursue and use all tech
- Fixed ship hulls on tech tree (e.g. fighters) always resolving to human race hulls when research project is disallowed for player's race

## **GALAXY MAP**

- Refuelling Location icons in system badges now reflect current fuel levels (i.e. they will not show up if spaceports/mining stations are currently out of fuel) to help decide on construction/refuelling orders from the galaxy map level

## **GALAXY SETUP**

- Added new game startup setting - Hostile Races Near Player: allows specifying how many

neighbouring factions are hostile to the player. This can be used to effectively increase game difficulty

- Added explanatory tooltips to Default Events in Start New Game screen (Victory Conditions step)

### **CONSTRUCTION**

- Increased repair speed for very high tech abandoned ships (e.g. Planet Destroyer) so that can complete in reasonable time and use in the game

### **CHARACTERS**

- Ensure all automated admirals with fleets are always onboard the lead ship for their fleet
- Removed Uninhibited as a positive character trait, thus no longer gained from Rivalry Gizurean event

### **COLONY MANAGEMENT**

- Can now abandon a colony, making it independent (action button under Selection Panel)
- Abandon Colony button is disabled when the colony is your empire capital or is the last colony in your empire

### **COLONY POPULATION POLICIES**

- Implemented first pass of automated colony population policy settings for Resettle policy when unsuitable races at colonies
- Fixed double-up of population policy races when reset colony population policy after conquest
- Ensure reset colony population policy to default (assimilate all races) after invasion or rebellion

### **COLONIZATION**

- Tweaked automated colonization so that Colony Ships with preassigned colonization targets now seek other targets if original target becomes un-colonizable for some reason
- Colony ships that start with a specified load race will now only load that race (even when load colony population composition has subsequently changed), helping to ensure suitable races are used for new colonies
- Differentiated Queue Colonization buttons to more clearly indicate when using an existing colony ship to fulfil a colonization mission

### **GAME EDITOR**

- Changed game editor so that removing a planet now properly also removes entire planet location (all related moons, asteroids, ships, bases), thus avoiding orphaned items
- Fixed faulty Add Bonus dropdown in Game Editor

### **DATA AND STORY IMPROVEMENTS**

**Please note - Data and Story improvements are only available when starting a New Game.**

#### **Base Game**

- Mortalen story event "Destroyed Boskaran Troop Transport" has a lower discovery level so that players don't colonize the world prior to finding the event which makes it independent
- Now exclude dormant pirate factions in various situations (e.g. Kasim pirates) relating to pirate events
- Lowered dormant junkyard pirate base tech levels (prewarp home system events) to ensure they are not stronger than active pirate factions
- Now prevent pirates from accidentally investigating ruins in rare cases
- Fix for issue with ancient ackdarian spaceport ping
- Updated weapon intercept targeting values for all weapons
- Updated planetary defence weapon values, especially weapon effects to make sure planetary defence weapons are visible when firing at enemy ships near the planet

#### **Ikkuro / Dhayut DLC**

- Ikkuro "Web of Destiny" storyline has been rewritten: it should now be possible to lower the odds of Damazy rebelling if you put the effort in with money or research
- Updated Ikkuro fusion beams
- Various minor ship hull, model, data and event fixes to both DLCs

#### **Quameno / Gizurean DLC**

- Added description for Scouring reputation impacts (not just 'General Incidents')
- Degenerate Gizureans story world has been reduced in quality to prevent it from being overpowered

- Quameno story project no longer stolen
- Kasim population no longer disappears suddenly
- Various minor ship hull, model, data and event fixes to both DLCs

### **v1.1.6.7 – 31<sup>st</sup> August 2023**

#### **PERFORMANCE**

- Important fix for a major memory usage and stability issue; this fix should reduce memory usage significantly as well as increasing stability

#### **SHIP BEHAVIOR**

- Fixed military ships sometimes still attempting to refuel at dangerous locations
- Fighters are now more active in attacking target of parent carrier, even when not at war with target empire
- Point defense weapons now more responsive to intercept incoming weapons fire
- Automated exploration ships will now explore/survey asteroids with hidden resources when there are no other missions to perform (more thorough exploration of entire system without getting waylaid by often inconsequential asteroid resources)
- Individual ships in a fleet with Prepare and Attack mission will now auto-commence attack against target at waypoint even when rest of fleet have not yet arrived. This covers an edge-case where the target ends up being at the waypoint (which is usually a different location). In those cases, the ships that had already arrived sometimes did not engage the target, because they were waiting for the rest of the fleet.

So now they will engage the target if it happens to be at the fleet waypoint. No need to wait for the entire fleet in that case because they're already at the target and likely under attack from it.

#### **FUEL TANKERS**

- Ensure fuel tankers always completely deplete fuel cargo when refueling nearby fleet before obtaining more fuel

#### **CONSTRUCTION**

- Ensure Construction Yards list properly updates ships incoming for repair or retrofit
- When cannot afford to build new base, can no longer right-click on locations to assign build missions to construction ships
- Now allow retrofitting bases when at colonies of other factions (e.g. independent colonies)
- Ensure spaceport construction always follows colony population limit set in empire policy (do not build before reaching required population level)

#### **SHIP DESIGN**

- Ensured Ion Bomb (Teekan) and Ion Pulse weapons have component families assigned for preferred weapon policy purposes

#### **COLONIZATION AND MIGRATION**

- Fixed colony ships sometimes loading wrong population when some colony population policies are using Resettle policy
- Fixed bug where colonies that somehow got zero-population could break various things (e.g. Kasim)

#### **PIRATES**

- Pirates now unlikely to cancel a protection agreement when relation trend is positive, thus less likely to get protection cancelled soon after being accepted

#### **RESEARCH**

- Improved AI research prioritization in various areas (weapons, planetary defense facilities, colonization, ship hulls, etc) to avoid queueing excessively long research projects
- Fixed excessively high priority for Administrative Facility research projects

#### **PLANETARY FACILITIES**

- No longer build Terraforming Facilities at colonies that are already at 100% quality

#### **DATA**

- Minor updates to various data file values for artifacts, game events, planetary facilities and troops to fix a variety of reported issues
- Ensure Mortakosh battleship stays at starting location instead of roaming the galaxy

### **v1.1.6.5 “Discovery” – 22<sup>nd</sup> August 2023**

*Please note that for best results, we recommend starting a new game with 1.1.6.5 due to the number of fixes and improvements that won't take full effect without a new start.*

#### **CRASH FIXES**

- Fixed crash when updating research with repeatable techs
- Fixed crash when retrieving current build order
- Fixed rare crash when starting new game
- Fixed crash when finding mining target within range
- Fixed crash when updating research
- Fixed crash when fleet ship assigns escort mission
- Fixed crash when rendering colony in Selection Panel that gets removed
- Fixed crash when assigning exploration mission to ship
- Fixed crash when repeatable research project contains improved component values for missing component
- Fixed some rare crashes in the Stride engine
- Fixed rare crash when generating ship design name
- Fixed crash when determining whether an empire is a vassal
- Fixed crash when adding items to a location
- Fixed crash when rendering system badges
- Fixed crash when generating galaxy
- Fixed crash when updating research for independents
- Fixed crash in Music System when some audio components are missing
- Fixed crash when loading images
- Fixed crash when determining items in current view
- Fixed Stride bug relating to missing materials when rendering under heavy threading contention
- Fixed rare startup bug relating to dxgi.dll
- Fixed rare startup bug relating to missing CPU core affinity groups
- Fixed rare crash when using Build Order system badges
- Fixed rare crash when loading game
- Fixed rare crash when adding weapon effects to scene

#### **GAME ENGINE**

- Upgraded Stride engine to version 4.2.0.1, which means a slight rendering performance improvement and likely fixes some rare crashes
- Fixed game sometimes not starting on some systems with 32 or more CPU cores
- Fixed rare bug when loading a savegame

#### **GRAPHICS IMPROVEMENTS**

- Added additional game settings for color adjustment which may help with HDR mode brightness (gamma, brightness, contrast, saturation)
- Fixed very dark HDR rendering mode on some systems
- Improved ambient lighting in Ship Design screen
- Improved display mode selection to prevent issues when using DXVK/Vulkan with multiple monitors
- Improved HDR setup for some systems

#### **HIVE THREAT**

*The expanded and re-worked Hive threat is now a scaling mid-game threat for all empires to deal with. When the Hive first awakes, after it is encountered and realizes that the galaxy has enough active worlds to sustain it, only the smaller ships will wake up initially and begin raiding and scouting, but over time larger Hive ships will awake and eventually entire Hive Fleets will attempt to raid your inhabited worlds for resources and sustenance.*

- Reworked Hive threat to create a more interesting and gradually increasing threat
- Fixed rare situations where Hive threat could wake up earlier than intended
  - Added smaller hive ships in addition to large carriers: there are now Hive frigates and destroyers

- Hive ships when first discovered are dormant. They will begin to wake up starting with the smallest ships. This is influenced by the discovering player's tech level.
- Once the first Hive ship has awoken then all other ships progressively wake up over a period of several years
- Newly woken Hive ships will now band together in fleet to attack targets
- They will start by attacking pirates, then later faction bases, then finally raiding inhabited worlds
- They will be placed nearer to empire starting locations
- The player will now receive periodic sighting messages in Galactic News as various factions spot the Hive fleet
- Fixed The Hive faction showing up in places it should not (e.g. spy mission targets)
- Slowed jump speed of Hive hyperdrive component
- Hive hyperdrives can now be blocked by the first level of HyperDeny

### **PIRATES**

*The Pirates are now a bit smarter and better able to defend themselves against early game Empires as well as the early Hive ships. They will no longer always offer Protection when encountered. Some Pirate factions will be friendlier than others and some will need encouragement (gifts) to consider Protection as they would prefer to raid. This makes the Pirates a bit less predictable but also a potentially useful ally to have on your side against the Hive later on.*

- Initial pirate first contact incident now decays higher to target value (i.e. reduces upwards towards zero) over time, while still ultimately remaining negative. But makes it easier to get Protection Agreements with pirate factions when have very negative initial encounter
- Implemented brand new pirate cruisers: appearance is dependent on pirate strength in game start settings as outlined below:
  - When Very Strong then some pirate factions may start with a cruiser
  - When Normal or higher: when a non-pirate faction first attacks a pirate base then the pirates will auto-spawn a mostly completed cruiser under construction at their base, which will soon exit the hangar and respond to the attackers
  - When Normal or higher: when have sufficient money, pirate faction may build new cruisers (after initial attack on their base by non-pirates above)
- Decreased ship costs for pirates to encourage ship construction as they gain money from raids
- Changed Pirate Ambush event so that no longer switches abandoned ship to pirate faction with whom the discovering empire already has a protection agreement (which would then be broken)

### **WEAPON RESEARCH FAMILIES AND AI GUIDANCE**

*The new preferred Weapon family policy options allow you to guide your automated research and design in a more focused direction.*

- Added weapon component families to allow better ship design upgrades and more focused automated research and design. Can specify preferred weapon families for each weapon category in empire policy in the Construction policy sub-section
- Setting your preferred component family for each weapon type will guide ship design automation as well as automated research choices
- Altered some weapon component categories to better optimize AI research pathing
- Rebalanced some of the AI research pathing algorithms
- Added more variation to faction research and design choices via policy files
- Added support for alternate preferred component families per category. Can thus specify fallback preferred families for each weapon category in empire policy
- Improved weapon component selection by preferred weapon families for research and design (more focused on these)

### **RESEARCH**

- Ensure research progress acquired through game events or conquest no longer selects research projects that are not currently visible
- Ensure research breakthroughs always handle all aspects of project (e.g. diplomacy benefits), even when acquired through non-standard means, e.g. salvaging debris, acquiring artifact

### **REPEATABLE TECHS**

*The new Repeatable Techs at the end of the tech tree allow you to keep improving the final*

*components in the tree, once you have researched them.*

- Added minimum floor for repeatable tech values: cannot fall below 1% of original value (for improvements that have reductive values, e.g. weapon fire rate, energy used)
- Repeatable techs now have repeat count inside top-level icon when already researched once or more
- Project detail for repeatable techs now shows repeat count remaining when approaching limit, when at limit now also properly show 'Final Values' instead of 'Improved Values' (i.e. no next repeat)
- Default size multiplier for repeatable techs is now one, i.e. they do not increase in size/cost with each repeat. Size multiplier value is configurable in ResearchProjectDefinitions.xml
- Fixed component values sometimes not immediately updating when use repeatable techs
- Fixed display values for Static Energy Used in repeatable research projects
- Fixed repeatable research projects to work properly when targets of Steal Tech espionage missions
- Now show improved values (not current) for components/facilities/hulls in repeatable tech project detail
- Fixed incorrect bonus values for Repeatable Ship Hull Techs
- Made all bonuses additive on Repeatable Techs (ShipHullValues.Bonuses, PlanetaryFacilityValues.ItemBonuses, PlanetaryFacilityValues.EmpireBonuses)
- Fixed some display errors when showing project detail for some Repeatable Techs
- Added icon at top-right of research project to indicate that it is a Repeatable Tech
- Ensure that Repeatable Techs that are researched at game startup properly have their research count set to 1
- Implemented Repeatable Techs in Research Screen: level 8 research projects that can be repeatedly researched to improve various aspects of components, facilities and ship hulls
- Currently only have some sample research projects to test with: intercept range improvements to Guardian Defense Grid, troop attack and defense bonuses from Titan Manufacturing Center facility
- Ensure Repeatable Techs also add Weapon Damage Falloff when modifying range

### **ANCIENT GUARDIAN VAULTS**

*The new Ancient Guardian Vaults contain ancient knowledge archived by the Ancient Guardians. While the Ancient Guardian story is most closely connected to the Quameno faction, all empires can now discover these vaults, figure out how to open them and recover this ancient knowledge and certain ancient artifacts.*

*When the galaxy is generated, a variable number of Ancient Guardian Vault ruins will be scattered throughout the galaxy. These require specific research projects to open, but have valuable research bonuses and contain rare empire-boosting artifacts.*

### **GALAXY SETUP AND GENERATION**

- Added multiple options for toggling default events in Start New Game screen. Can enable/disable various items: PreWarp Home system events, abandoned ships and bases, debris fields, gravitic locations and major threats (e.g. Hive)
- Tweaked Caslon abundance levels when generating a new galaxy so that generally higher
- Fixed some government types altering home colony quality (too high) with PreWarp game start (when build startup facility)
- Fixed startup problems due to incorrect GameStartSettings file
- Ensure Shakturi race does not accidentally show up for independent colonies, etc
- All independent colonies now automatically set appropriate suitability (quality) for populated race, even when they are story-generated locations
- Fixed home colony quality sometimes too high when using Harsh homeworld game settings
- Reduced radius of story nebula and storm clouds to minimize chance of overlap with home system locations

### **EMPIRE AI IMPROVEMENTS**

- AI empires can now better detect and attempt to recover from excess maintenance costs that turn cashflow negative (also applies to player empire with appropriate automation settings)
- This can often happen when an important colony is lost through conquest in a war, thus suddenly



- removing a large portion of empire income
- Faction in this situation will attempt to retire or scrap excess military ships, fleets or troops until cashflow recovers
- Rebalanced automated military ship building amounts to more closely consider current threats, i.e. do not build too many military ships until face threats from other factions

### **UI IMPROVEMENTS**

- Colony Event tooltips now also show end date for event (from Selection Panel and Main View Header)
- Separated Empire Bonuses into their own list under Empire section in Control Center (next to Government section)
- Fixed some empire bonuses sometimes falling off the end of list in Bonuses screen when have race-specific bonuses, e.g. Gizurean population growth rate modifier
- Added new filtering and sorting options for Available Components list in Ship Design screen that include new component families
- Added new filters to the Colonies list to show colonies that require terraforming (quality not at maximum) or have reached maximum terraforming level and should have facility removed
- Disallowed research projects for a race no longer show disallowed race images in tech tree unless they apply to the player race (less visual clutter)
- Ensure New Mining Locations list falls back to make proper use of colonies for build resources if spaceports are missing resources (thus Queue Build buttons are made active)
- Ensure Mining Bonanza home system colony event has proper image
- Fixed some factions having mismatched colors from their selected flag (e.g. Gizurean)
- Empire bonuses are now shown in a separate tab in the empire menu
- Now force immediate update of all empire bonuses when switch government, including ship-specific bonuses like Maintenance Savings
- Added an icon for any active colony events in your empire to the header in the main view. Hover for details of each, click to select colony with event
- Now display fleet targeting level in Selection Panel when have fleet selected
- Improved button text layout in various UI areas
- Fixed Show Me button sometimes not working on advisor messages
- Fixed Show Me button on messages often not working when related ship is in hyperjump
- Fixed repeated construction messages

### **POPULATION POLICIES**

- Greatly reduced extermination rate of extermination population policy
- Colonies that are wiped out due to exterminate population policy (all population eliminated) now automatically transfer any characters or troops of your empire to nearest colony
- Altered diplomatic and reputation impact from Extermination population policy: values are now more immediate and predictable instead of being applied over time, similar to how Slavery policy works

### **DIPLOMACY AND REPUTATION**

- Fixed bug where very low empire reputation could sometimes result in other factions concern over your reputation not being intense enough
- Diplomacy advisors will no longer suggest gifts to independent colonies while they are being invaded (by any faction), even when your diplomatic strategy for them is set to 'Diplomacy leading to peaceful integration'
- Honoring defense treaties no longer incurs reputation penalty from breaking any existing Non Aggression or Defense treaties with war empire

### **SHIP DESIGN AND RETROFIT**

- Fixed recent bug where auto-generated ship and base design names were not progressing (SSP-1, RS-1, etc)
- Fixed ship and base designs not selecting higher levels of Armor (was always using Standard Armor)
- Ship Design screen now shows comprehensive information on Bonuses from Hull and Empire that are relevant to the current design. These bonuses are also included in all values, thus showing

current and accurate values for Weapon Range, Weapon Damage, Hyperjump Speed, Shield Recharge Rate, Mining Rate, Maintenance Savings, etc

- When view Ship status by clicking on Design name in Selection Panel, the Ship Design detail screen now properly shows ship values with current bonuses applied (from empire and ship), thus with accurate weapon range, maintenance cost, etc
- Added some missing info to Energy and Defense sections of Ship Design Detail screen
- Fixed ship/base build costs showing differently in Designs List vs Ship Design screen
- Ensure pirate base designs use hull large enough to fit critical components, e.g. mining engine for fuel extraction
- Adjusted ship model scaling to also include vertical size, not just horizontal dimensions

#### **TROOPS AND TROOP GARRISONS**

- Improved colony troop garrison logic so that more willing to garrison troops when have high unrest (e.g. soon after colony conquest)
- Improved selection of race-specific fleet templates and army templates (now properly prefer race-specific templates over generic templates)

#### **CONQUEST**

- Ensure that when empire is destroyed (last colony conquered) by last colony becoming independent (rebellion) that only freighters become independent ships, other ship and base types removed
- Now clear any generic colony events when conquer a colony (e.g. race-specific events)

#### **THREAT EVALUATION**

- Improved strength evaluation and avoidance of dangerous locations with dormant pirate bases

#### **SPACE COMBAT**

- Fixed bug where Shields with high resistance could sometimes increase in value when struck by weapons with low damage values (i.e. below resistance level)

#### **ENEMY TARGETS AND THREATS**

- Enemy Targets list now properly always shows known strength for targets
- Now include major threats in Enemy Targets list when visible (Hive, Planet Destroyer, etc)
- Fixed problem where dangerous locations were often not being removed after fleets investigated and cleared threats
- Fixed Queue Attack button for Hive ships Now properly queues/un-queues attacks against each hive ship
- Fixed Cancelling Queued Attacks against fleets in Enemy Targets list so that always works properly

#### **FLEET AND SHIP BEHAVIOR**

- Automated fleets now more willing to auto-remove damaged ships from fleet when the ship is too far from repair yard to reach in a timely manner (when Fleet Ship Management is automated)
- Fixed bulk transport freighter missions sometimes failing to load adequate cargo
- Ensure independent freighters do not travel too far when fulfilling resource orders
- Fixed high-end hyperdrives sometimes jumping too often, even for short range travel (low jump accuracy values)
- Fixed Explore System ship mission sometimes ending before entire system explored
- Improved automated fleet formation and fleet ship topup so that more willing to add appropriate ships to fleets while still attempting to maintain fleet cohesion by preferring nearby ships
- Fixed ships sometimes getting stuck at edge of galaxy

#### **REFUELLING AND FUEL TANKERS**

- Improved selection of refuelling and repair locations for ships: refuel or repair bases must have docking bays, i.e. bases under construction do not qualify until sufficiently built
- Improved how fuel tankers refuel non-fleet ships: more careful to only refuel ships that are beyond range of nearest refuelling point. So will not refuel ships that could otherwise reach refuelling point on their own
- Fixed duplicate fleet names when rendering Fuel Tanker list
- Fixed bug where fuel tankers sometimes did not load fuel from a refuelling point
- Ensure ships do not attempt to auto-refuel if they have no fuel capacity (damaged), instead first

assign repair mission

### **FUEL AND RESOURCE LOGISTICS**

- Ensure freighters and other ships properly preserve salvaged resources and offload them when visit colony or spaceport
- Ensure bases not at colonies get their (manually set) resource stock levels fulfilled by cargo deliveries (e.g. fuel) even when they are not mining stations
- Improved mining station construction so that do not overbuild when already met required rate for specific resource. This will reduce the overall number of AI-built mining stations and freighters, thus also lowering overall fuel usage
- Lowered required rate for construction resources to more accurately reflect actual usage
- Now indicate excessive oversupply for resources in New Mining Locations list, thus helping player avoid overbuilding mining stations for resources where supply already meets demand

### **EXPLORATION**

- Fixed exploration map pings sometimes not clearing when location is visited by ship

### **NEBULAE AND STORMS**

- Some nebula effects no longer apply to ships or creatures while hyperjumping: all damage types, shield drain, energy drain, sub-light speed modifier
- Fixed rare nebula pathing issues when assigning fleet missions to destinations inside nebulae

### **CHARACTERS**

- Inspiring Presence and Demoralizing character traits now properly apply to all characters at a location, even other characters with Inspiring Presence or Demoralizing trait when there are more than one character with the trait at the location
- Ensure remove irrelevant character traits when an existing character becomes the new empire leader
- Improved application of character appearance chance bonuses, so that even more likely to get characters of desired roles

### **PLANETARY FACILITIES**

- Significantly reduced costs for all planetary defense facilities
- Colonies will now upgrade planetary facilities when higher facility in same family is available, and when planetary facility construction is automated and can afford
- Ensure Terraforming Facilities are built on colonies even when have no damage (when planetary facility construction is automated)
- Improved management of automated facility funding level so that more likely to have spare maintenance funding to build and upgrade facilities

### **COLONIZATION AND TERRAFORMING**

- Now automatically clear queued colonization when another empire colonizes the target planet
- Reduced natural planet quality damage repair rate for uninhabited planets
- Prevent colony ships from fleeing enemy ships when under construction
- Ensure automated colony ships that need repair or construction completion assign repair mission

### **SHIP AND BASE CONSTRUCTION**

- Improved evaluation of new mining locations so that accurately indicate when target is beyond construction ship fuel range: targets that mine fuel now use extended fuel range (can refuel at new mining station, thus can use full fuel range). Thus do not disable 'Queue Mining Station' button when new target still within fuel range
- Now properly cancel construction ship mission when base being built is attacked and destroyed (e.g. by pirates or space creatures), thus avoiding repeated cycle of rebuilds and consequent drain on private economy
- Fixed faulty construction yard wait time when processing many retiring ships
- Fixed rendering for construction yard list: sometimes not showing all ships under construction in list items
- Cancel construction action button no longer destroys ship waiting in construction queue if retrofitting, repairing or retiring (only destroys ships when constructing anew)

### **MODDING SUPPORT**

- Added support for static Characters (no animations, just a 2D image) defined in the file Characters.xml

- Define name, race and role
- Include full set of skills and traits for the character
- Includes support for character images either from bundles or file paths, or can use full Spine character animations
- Can specify appearance order so that a defined set of characters show up in expected order
- Can specify AppearOnlyInFirstEmpireOfRace to ensure that player always gets this character (not other factions of the same race)
- Improved construction ships repairing disabled ships
- Disabled ships that cannot travel for repairs now properly avoid assigning missions they cannot complete
- Ensure fleets properly retrofit (use correct fleet template), even when formed using Create New Fleet button

#### **GAME EVENT FEATURES**

- Added new Game Event condition types: EmpiresNotPlayer, EmpiresPirate, EmpiresNotPirate
- Optionally allow some game event actions to suppress any messages (ResearchProgress, ResearchBreakthrough, ResearchProjectEnable)

#### **GAME EDITOR**

- Fixed some values not updating in the Game Editor (e.g. Ship fuel levels)

#### **GAME EVENT CHANGES**

- Anchored Mortakosh battleship to starting location so that does not roam around the galaxy once awoken
- Changed salvage bonus for Shakturi Debris Field from Firestorm Torpedo tech to system exploration

#### **IKKURO AND DHAYUT DLC**

- Model bundle and data fixes for Ikkuro and Dhayut

#### **v1.1.4.4 “Hyperspeed” – 26<sup>th</sup> May 2023**

*Please note that for best results, we recommend starting a new game with 1.1.4.4 due to the number of fixes and improvements that won't take full effect without a new start.*

##### *"Hyperspeed" Performance Update*

*This update fixes and improves many long-standing issues with gameplay and system compatibility, but the biggest change is a massive increase in game performance, especially with regard to simulating the "living galaxy" in Distant Worlds 2. We've been working behind the scenes for many months to try to fix the most significant performance issues with Distant Worlds 2, which involved making quite a few low level changes which affected just about every area of the game. These changes required a great deal of testing and tweaking to work out all the bugs so that we could maintain the stability of the "Aurora" update combined with the much improved performance of "Hyperspeed". We hope you enjoy these changes and that your DW2 galaxy feels much more alive as a result.*

*"Hyperspeed" also includes the first round of improvements and fixes for the Factions: Ikkuro and Dhayut DLC. We will be making more improvements, especially to the Damazy/Web of Destiny storyline, in the next round of updates.*

#### **CRASH FIXES**

- Fixed crash when ship evaluates collision avoidance
- Fixed rare crash when ship is destroyed
- Fixed crash when change camera view from Top Down to Free Form, then to Low/Med/High Angle
- Fixed crash when base processes its docking queue
- Fixed crash when determining empire fuel resources
- Fixed crash when determining excess resources at a location for bulk cargo transport
- Fixed crash when updating map overlays
- Fixed rare crashes when adding or removing character skills or traits

- Fixed crash when repairing ship or base
- Fixed rare crash when selecting random race
- Fixed crash when calculating construction yard wait time
- Fixed crash when calculating ship retrofit cost
- Fixed crash when rendering system badges
- Fixed crash when determining default display adapter when running on Linux via Proton
- Fixed rare crash when evaluating dominant race for a colony population
- Fixed rare crash when calculating population attack strength at invaded colonies
- Fixed various threading issues causing a variety of strange behavior
- Fixed rare crash when ship reviews fleet escort
- Handle rare exceptions when loading character animations
- Fixed crash when lock view on jumping ship while weapon effects are turned off
- Fixed rare crash when updating territory map
- Fixed rare crash when review fleet escort ships
- Fixed crash in Start New Game screen when a playable race has a null description

### **CRASH LOGGING**

- Improved robustness of session log and exception recording

### **COMPATIBILITY AND GAME SETTINGS**

*Please read through all the new in-game settings, which should allow you to tailor game performance much more to your liking.*

- Added System Load Target setting in game settings, allowing you to limit CPU usage
- Added Maximum FPS setting in game settings, allowing you to limit GPU usage
- Added Vsync as a game setting (enabled by default) which means DW2 will try to match your monitor's refresh rate in terms of actual displayed FPS
- Additional settings to disable texture streaming, particle effects, weapon effects and unit damage overlay are available for players with ongoing performance issues to test to see which may help on a given system
- Texture Streaming is now off by default, can reenable in game settings but DW2 generally performs better with this turned off
- Fixed some display values not being properly remembered in game settings
- Added option for when switch music tracks: when scene changes or when track ends
- Added additional volume settings and fixed an issue which caused problems with the Windows Volume Mixer on some systems
- Split out sound effect volume controls for User Interface and Nebula Storms
- Added configurable nebula rendering density option in game settings, if you still have any performance issues in nebulae, turn this setting down
- Added game setting to disable Nebula Storm scene-wide lightning flashes
- Added configurable background star field density level option in game settings to allow each player to adjust the density of the starfield to their liking
- Added configurable background star field opacity option in game settings to allow each player to adjust the brightness of the starfield to their liking

### **INSTALLATION ISSUES**

- More gracefully handle missing shiphulls or bundles (models) and warn player about need to fix installation
- Fixed installation issue with loading DLC models when purchased from different platform to main game (e.g. Steam vs Matrix), this could cause the DLC factions to not show up in some cases even when installed

### **VISUAL IMPROVEMENTS**

- Tweaked appearance of background starfield, which should eliminate a bad flickering visual effect that was only visible on some kinds of monitors
- Fixed up background starfield fade-out
- Fixed occasional single-frame flash of full-size ship model and engine exhaust on-screen when ship jumps into currently-viewed location
- Ensure deep space locations still have adequate ambient lighting

- Fixed ship symbol system to no longer periodically blink

#### **GRAPHICAL IMPROVEMENTS**

- Fixed index issues causing large models to sometimes not load correctly

#### **SOUNDS**

- Fixed star and black hole sounds not honoring sound effect volume

#### **PERFORMANCE IMPROVEMENTS**

- Massive performance improvements in all areas
- Expanded the Shift-Tilde performance overlay to provide much more information about game performance
- Draw overhead reduced by 75% in worst case scenarios
- Main thread drawing is now rarely or never blocked
- .Net Garbage Collection occurrence on main thread is significantly reduced
- .Net Garbage generation is significantly reduced
- CPU 0 is targeted for drawing, all other work is pushed to other CPU cores except particle effects
- Hitching due to various components of the UI (cashflow, colony approval) are reduced or eliminated
- Background simulation rate significantly increased, potentially more parallelized on higher core counts
- Various improvements to multithreading
- Improved performance when freighters assign bulk transport missions
- Optimized nebula rendering to be more performant
- Fixed some items not being processed in background
- Fixed some systems and locations becoming very slow when have very many debris items

#### **MEMORY MANAGEMENT**

- Added precautionary checks when saving Spaceltems (debris, etc) and Trade Offers
- Now more active in removing empty temporary locations after ships and creatures leave them
- Reduced memory usage for nebula path finding

#### **SHIP AND FLEET BEHAVIOR**

*Fleet behavior improvements in this update are focused on refueling and fleet tanker behavior as well as troop loading and fighter management. You should find far fewer instances of fleets getting stuck waiting for fighters, getting stuck loading troops, running out of fuel or tankers not doing their jobs. We found that most of the remaining major issues related to manually controlled fleets or automated fleets which had manual ships added to them, but the resulting fixes improved fleet behavior across the board.*

- Further reduce likelihood of fleets failing to refuel (e.g taking on new attack mission without first refuelling)
- Improved fleet troop loading
- Improved fighters boarding carriers when under heavy load, thus improving fleet responsiveness
- Fleets and other ships now more careful about going to dangerous locations (refuelling, investigating, etc), especially when considering hostile stationary defenses (bases)
- When adding manually-controlled ships to an automated fleet (Role is not Manual) then also change ship to automated. This is necessary to avoid some edge case issues where reinforcing manual ships were not behaving properly within automated fleets.
- Improve fleets sometimes taking on miniscule threats (e.g. civilian ships) when could instead attack major targets (bases & military)
- Further extend threat strength evaluations (now including strength of bases, not just 'mobile' strength) to systems (in addition to locations)
- Fixed bug where fleets would sometimes attack creatures at distant locations
- Tightened fleet formation when most ships in fleet are set to Core (role within fleet)
- Fixed fleets sometimes repeatedly attempting to move to home base when most ships in fleet are set to Core (role within fleet)
- Fixed troop transports sometimes failing to find docking point at colony when loading troops
- Carriers will now slow even further if waiting for slow fighters to board while preparing to jump
- Expanded conditions when fighters are considered stranded and are abandoned (e.g. reactor

disabled and thus unable to move fast enough to board moving carrier)

## **FUEL TANKERS**

*How should Fuel Tankers work?*

- *When fuel tankers are low on fuel they will either load fuel from a refueling point or mine fuel from a nearby fuel source.*
- *When assigned to a fleet, fuel tankers will monitor and refuel fleet ships as needed, while attempting to stay clear of any battles.*
- *When not assigned to a fleet, they will refuel any ship in your empire that needs it, starting with fleets, then other military ships, exploration ships, and all other ships.*
- *When fuel tankers are assigned to a fleet: if the fleet detects that it needs to refuel then it will first check whether it's fuel tankers can completely refuel the fleet. If so, and the tankers are within fuel range, and the fleet location is not too dangerous, then the fleet will signal the fuel tankers to top them up. The fleet will wait at it's current location until the tankers finish refueling them.*
- *Improved fleet usage of Fuel Tankers Automated fleets will now signal their automated Fuel Tankers to refuel them when closer than travelling to fixed refuelling point. Fleet will then wait until tankers refuel them. Fuel Tankers must be idle or mining fuel, within range and able to completely refuel fleet (see further info on Fuel Tankers below)*
- *Improved fleet refuelling - less willing to take on other mission types when fleet ships have low fuel, instead more likely to refuel*
- *Ensure fuel tankers move with fleets even when fleet is travelling to random point in deep space*
- *Reduced number of fuel tankers built*

## **RESOURCE LOGISTICS**

*We found a number of additional issues with the Resource Logistics which could be improved, resulting in another jump in private economy performance with regard to getting resources to where they should be going. This especially improved Caslon distribution. A summary of the key improvements:*

- 1. More accurate updating of some critical values in high contention threading scenarios (particularly cargo amounts)*
  - 2. Reduced static energy usage for shields and thus much-improved flow-on effects for ship designs (less overall fuel usage, less energy collectors and reactors required, thus more general bays for fuel cells, thus better fuel range)*
  - 3. Better fuel tanker behavior within fleets and better coordination between fleets and fuel tankers*
  - 4. Better awareness by all fleet ships of event-created threat locations especially with regard to refueling*
- *More accurate calculation of some values under high contention threading scenarios*
  - *Better handling of resource reservations when cancel refueling or transport missions in high contention threading scenarios*
  - *Now always set default resource stock level values when planet first colonized, regardless of automation settings*
  - *Fixed bug where reserved cargo would often not be properly utilized*
  - *Tweaked expected Fuel demand level to properly prioritize construction of fuel mining stations and mining ship fuel seeking*
  - *Tweaked resource mining rate when have many resources at a location (more than 5) so that mining rate for each resource remains at reasonable level (not too slow)*

## **COLONIZATION AND MIGRATION**

*We found and fixed some remaining issues which could result in bad automated decision making regarding suitability for colonization and migration.*

- *Improved selection of build location for new colony ships - more likely to build at colonies with desired race for colonization target (but build colony must still have adequate construction resources)*
- *Fixed colony migration sometimes using races with suitability below threshold specified in empire policy (Minimum Suitability)*
- *Ensure passenger ships load the most suitable race for migration destination from pickup colony (race at pickup colony must either meet load threshold of 500 million population, or have policy set to Resettle)*

## **PLANETARY DEFENSE FACILITIES**

*Defense facilities were not working as intended, partly due to bugs and partly due to data issues. Both areas received fixes to ensure your planetary defense facilities are worth their maintenance cost.*

- Fixed fighters at colonies (Fighter Bay facility) not being built or launched
- Ensure fighters at colonies (Fighter Base facility) are properly removed when empire destroyed
- Fixed weapon planetary facilities not updating properly when reload savegame
- Fixed weapon planetary facilities so that properly have multiple instances of weapon as defined in PlanetaryFacilityDefinitions.xml. This means most facilities are about 5x more effective than they were previously.
- Improved visibility of planetary defense weapons

#### **SHIELDS**

- Reduced static energy requirements for Shield components as this was causing auto-design and fuel issues
- Added new ShieldRechargeEnergyUsage values for Shield components to replace previous increased static energy usage. This will only use energy when the shield is actually recharging. This helps differentiate the high recharge rate shields (which consume more energy) from the high strength shields (which consume less).

#### **EXPLORATION**

- Fixed bug where could investigate ruins multiple times when 'Suppress All Messages' enabled in game settings
- Fixed erroneous repeated ruins investigation at colonies when one of the related game events is disabled

#### **RESEARCH**

- Ensure always honor EnabledByDefault setting on research projects when generating tech trees for each faction, even for pirates
- Properly exclude disabled research projects from various situations: random exploration tech breakthroughs, etc
- Fixed duplicate research bonuses from research stations at colonies with ruins

#### **DIPLOMACY**

- Ensure never get negative tribute income from vassals, there is now a minimum tribute level.

#### **MESSAGES**

- Improved some story messages by highlighting bonuses received from event

#### **CONSTRUCTION**

- Fixed inability to build another spaceport at a colony if scrap existing spaceport while under construction
- Ensure properly acquire all ships in construction queues when take ownership of ship, base or colony

#### **NEBULAE AND STORMS**

- Nebula effects (jump slowdown, damage, etc) no longer apply when a ship is skirting the edge of a nebula cloud. Must now be deeper into nebula before ship will be slowed or damaged. This is a temporary measure to improve some edge cases until a better pathfinding solution can be implemented.

#### **HIVE AND PLANET DESTROYER THREATS**

- Improved mission selection for Hive and Planet Destroyer ships - thus more performant and more able to find place to self-repair any damage

#### **UI IMPROVEMENTS**

- Added larger step increments for numeric up/down controls (shift-click, ctrl-click, shift-ctrl-click) in areas of the interface that support them
- Provide better UI visibility of storm/nebula/location effects (ion damage, direct damage, jump slowdown, etc...): icon and tooltip in system view summary at bottom-center of screen
- Added horizontal scrolling for Select Your Race step of Start New Game screen to allow for more than 10 races

#### **GAME EDITOR**

- Ensure Game Editor is properly exited when Exit to Menu

#### **MODDING AND GAME EVENTS**

- Added new GameEventAction condition type to better support story events: EmpireIsPlayer



- Provided better support for static character and race art in Character screen (fixed distortion and ensure have background)

#### **GAME DATA AND BUNDLES**

- Various data tweaks, improvements and fixes to components and facilities
- Updated Haakonish ship models with some minor fixes

#### **OTHER**

- Fixed potential bug with Assault Pods when loading savegames
- Fixed home colony quality sometimes dropping slightly soon after game start when use Republic or Monarchy government types
- Reduced default victory condition threshold for new games to 60% to ensure most games could reach a victory end state

#### **FACTIONS: IKKURO AND DHAYUT DLC**

- Corrections for typos and issues in various story events
- Corrected Dhayut Infantry troop strength
- Fixed Dhayut Resort Base issue
- Fixed Ikkuro Cruiser issues

### **v1.1.2.4 – 16<sup>th</sup> March 2023**

#### **CRASH FIXES**

- Fixed various rare crashes
- Fixed rare crash when ship resolves mission commands
- Fixed rare crash when changing character empire
- Fixed crash when rendering header panel for Civilian Ships section

#### **COMPATIBILITY**

- Added better handling of 'Unsupported Graphics Profile' error (DirectX 11 not supported): auto-reset from DXVK to DirectX 11 if relevant and explain need to upgrade video driver

#### **GAME DIFFICULTY**

- Research bonus thresholds for research projects for non-player factions now progressively scale with game difficulty level (non-players have lower thresholds)
- Fixed game difficulty level being incorrectly reset when start a new game at difficulty higher than normal

#### **UI IMPROVEMENTS**

- Now properly clear active textbox when press Enter so that subsequent keypresses properly handled by UI without additional mouse clicks (e.g. when rename item in Selection Panel)
- Readjusted available user interface sizes based on vertical screen resolution
- Ensure properly close diplomacy detail panel when exit to main menu
- Fixed armor components not showing in ship damage report when empire has not yet researched the armor component (acquired high tech ship)

#### **SHIP DESIGN AND RETROFITS**

- Fixed bug with Ship Design retrofit path where ships and bases would sometimes retrofit to the wrong design when using 'Latest Design for Largest Hull for Role'
- In Ship Design screen, selected component is now cleared only when right-click in empty part of model view area (not when left-click)
- Fixed faulty text in tooltip on Retrofit action button under Selection Panel when multiple designs available for ship or base ('Multiple None Designs available')
- Slightly reduced energy over-allowance factor when auto-generating ship and base designs so that do not generate designs with insufficient energy collectors
- Disallow setting civilian ship and bases to manually retrofit using button 'Mark Selected As Manual Retrofit' in Designs List screen
- Removed some incorrect warnings for some ship roles in the Ship Design screen

#### **SHIP AND FLEET BEHAVIOR**

- Improved passenger ship migration mission selection in situations where few migration sources for destination colony due to limited available suitable races or low source population
- Automated fleets no longer attack pirate bases in foreign territory unless manually queued

- Some ships no longer participate in salvaging debris (Colony Ships), while all others are now more cautious to not salvage while there are threats at the location

#### **FIGHTERS**

- Tweaked fighter logic so that they are more willing to attack distant targets that their parent carrier is attacking
- Fixed bug where fighters onboard bases or carriers could sometimes get damaged by nebula effects (storms, etc)

#### **REPUTATION**

- Reduced reputation impact from hunting space creatures and destroying pirates

#### **DIPLOMACY AND WAR WEARINESS**

- Tweaked how race aggression and caution values affect diplomacy: more aggressive races slightly more likely to pursue conquer strategies. more cautious races more likely to pursue friendly strategies
- Properly include war weariness reduction bonus when displaying war weariness for a faction in Diplomacy screen and other places
- Tweaked tech trading costs so that other faction does not value items too low

#### **COLONIZATION AND MIGRATION**

- Fixed Colony Ships sometimes constantly loading and unloading colonists when preferred colonization target currently has threats (dangerous location) and alternative colonization targets also have threats

#### **POPULATION POLICIES**

- Additional increase for slavery income factor, note that for maximum revenue you will likely want to control taxes on planets with slavery manually
- Altered how slavery colony population policy affects happiness and reputation - constant impact level based on amount of population enslaved
- Rebalanced income and unhappiness from slavery colony population policy

#### **RESEARCH**

- Ensure always enable all first-level diplomacy research projects for all colonized races in empire, regardless of how acquired (e.g. first contact with race may be through colony conquest)
- Slightly increased automated building level for research stations (when viable research targets exist)
- In Research Screen fixed research projects sometimes incorrectly disallowed from moving up in queue when optional random path to parent project not enabled
- Fixed display of Slavery Unhappiness modifier value to be green (beneficial) when value is negative on Enslavement Control facility in Research screen
- Tweaked research paths for troop transports to avoid requiring the Ikkuro to only research their own splinter pods

#### **INTELLIGENCE MISSIONS**

- Adjusted intelligence mission difficulty levels: all missions slightly easier, very difficult missions quite a bit easier
- Ensure properly clear target empire when manually assigning counter intelligence missions to own spies
- Factions with Internal Stabilization intelligence mission now use it more frequently
- Fixed intelligence mission success chance sometimes being incorrect in Character Mission screen in mission target selection dropdown list
- Fixed ambassadors not gaining experience from intelligence missions when assigned to pirate factions
- Fixed Spy Mission user interface for new Dhayut intelligence mission types (Influence Empire Positively and Influence Empire Negatively) to ensure player supplies Mission Target empire

#### **LEADERSHIP CHANGES**

- Greatly reduced chance of rebellion at capital colony after disruptive leadership change

#### **CHARACTERS**

- Decreased minimum total skills before characters are auto-dismissed from 0% to -10% (when Characters are automated) to reduce too rapid turnover
- Player faction now never auto-dismisses leader character unless total skills are -50%

- Ensure new leaders are never selected from imprisoned characters

#### **GAME EVENTS**

- Fixed some game/colony events not always triggering
- Now include bonus descriptions in tooltip for any active Colony Events at top of Selection Panel (when colony selected)
- Fixed ruins investigation logic to be more careful when evaluating untriggered game events for investigating race
- Extended GenerateShipBase game event action so that can generate ships or bases owned by location empire

#### **NOTIFICATIONS**

- No longer send galaxy-wide news messages for colony events that are initiated from race- or government-triggers

#### **MODDING**

- Fixed Mod profiles sometimes not being remembered correctly

#### **OTHER**

- Additional balance improvements to some research projects, facilities and components
- Added new interstitial loading screen images when DLC installed (Ikkuro + Dhayut)
- Added new Empire Nouns and Adjectives for new government types
- Data file updates with some minor adjustments to Dhayut and Ikkuro research projects
- Fixed 'Mining Bonanza' game event to properly apply temporary mining bonus

### **v1.1.0.9 “Aurora” – 2<sup>nd</sup> March 2023**

*While you can continue your previous games, we strongly recommend starting a new game with this update for the best results as many fixes will not fully affect ongoing games.*

#### **TECHNICAL IMPROVEMENTS**

- Upgraded to .Net 7.0, which brings some performance improvements
- Switched to "self-contained" build. This increases the size of the DW2 executable, but means that you do not need to install .Net 7.0 separately
- Updated DXVK version 1 with the most recent changes
- Added DXVK version 2 as a new rendering option.  
**IMPORTANT:** *Please remember that if you try one of the alternate DXVK rendering options and DW2 will not launch, you should use the `-use-dx11` command-line parameter or delete the `gamesettings` and `gamestartsettings` files in the `/data` sub-folder of your install directory to tell DW2 to start in the default DirectX 11 mode again.*

#### **COMPATIBILITY**

- Added startup warning when attempt to run DW2 on video cards with inadequate specs (DirectX-11 support required)
- Added extra check for corrupt game settings at game startup and auto-regenerate if necessary

#### **PERFORMANCE IMPROVEMENTS**

- Improved performance (reduced micro-stuttering) especially in battle scenes where many ships are destroyed at once or many ships change empire

#### **CRASH FIXES**

*Many crashes of various kinds, mostly rare, were fixed since 1.0.8.6 and DW2 is generally much more stable when running the Aurora update.*

- Fixed crash that sometimes occurs when setting CPU processor affinity on single-core computers
- Fixed rare crash when ship attacks target
- Fixed rare crash when ship fires weapons at enemy target
- Fixed rare crash when repairing ship damage
- Fixed rare crash when changing empire relation
- Fixed crash when removing disabled ships from fleets
- Fixed crash when rendering Galactopedia article for alien race with missing description
- Fixed crash when fleet evaluates whether to attack a target
- Fixed crash when determining empire stock levels

- Fixed crash when splitting empire during disruptive leadership change
- Fixed crash when ships is firing weapons at targets
- Fixed crash when determining ship construction amounts
- Fixed crash when empire updates its known visible data
- Fixed crash when splitting empire during civil war
- Fixed rare crash when generating a new game
- Fixed crash when ship attacks target
- Fixed crash when ship is hyperjumping
- Fixed crash when upgrading ship design from loaded design where hull has subsequently changed
- Fixed crash when calculating empire bonuses
- Fixed rare crash when loading savegame
- Fixed rare crash when ship attacks target
- Fixed rare crash when drawing system badges in galaxy view
- Fixed crash when reviewing empire bonuses
- Fixed crash when checking whether a ship or base is under construction or repair
- Fixed crash when changing empire relation
- Fixed crash while evaluating current attack target
- Fixed rare crash when attempting to determine amount of video memory in system
- Fixed bug where exploration ships could sometimes get locked in endless loop attempting to explore location. This could cause predictable crashes and the appearance of save file corruption.
- Fixed crash when ship or fighter performs attack mission
- Fixed crash when drawing government bonuses
- Fixed crash when drawing research screen after discover 'Mysterious Plague'
- Fixed crash when disabled ship checks for repair at nearby yard
- Fixed rare crash when ships scan area for threats
- Fixed rare crash when loading game
- Fixed rare crash when ship assigns retrofit mission
- Fixed rare crash when repairing abandoned ship or base
- Fixed rare crash when calculating colony bonuses

## **MODDING**

*This update adds Steam Workshop support for Distant Worlds 2 modding. It also includes our first in-game Mod Manager (for all mods, not just Workshop mods) and improved modding support, which is documented below.*

- Distant Worlds 2 now supports Steam Workshop modding (see additional documentation in your /Manuals sub-folder for details)
- Added additional modding documentation and two modding tutorial videos on ship modding and how to organize and upload DW2 mods to Steam Workshop in the /Manuals sub-folder of your installation location
- Eliminated requirement for modders to regenerate SHMD files when ShipHulls.xml or models change (this is now done seamlessly whenever these change)
- Greatly increased the speed and stability of SHMD regeneration

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DW2 Modding currently supports the following modded items:

1. XML data files
  - Mods should add their own versions of these files by appending a suffix to the filename, e.g. Races\_MYMOD.xml. The file will then be loaded after the base Races.xml file, adding any new entries and overriding any existing entries that use the same RaceId value
    - All of the XML data files use this same file-naming and item-overriding approach. So you can change data in the base XML data files by using the same Id value in a modded file, e.g. OrbTypeId for OrbTypes.xml, ResearchProjectId for ResearchProjectDefinitions.xml, etc.

- All of the following XML data files can be modded:
  - ArmyTemplates.xml, Artifacts.xml, CharacterAnimations.xml, CharacterRooms.xml, ColonyEventDefinitions.xml, ComponentDefinitions.xml, CreatureTypes.xml, DesignTemplates.xml, FleetTemplates.xml, GameEvents.xml, Governments.xml, OrbTypes.xml, PlanetaryFacilityDefinitions.xml, Races.xml, ResearchProjectDefinitions.xml, Resources.xml, ShipHulls.xml, SpaceItemDefinitions.xml, TroopDefinitions.xml
  - Documentation and tools for some of the above file types can be found here: <https://www.matrixgames.com/forums/viewtopic.php?f=11899&t=380486>
- 2. Localized game text in GameText.txt
- 3. Stride content bundles
  - Stride bundle files built in Stride Game Studio, containing models, materials, textures, spritesheets and sound effects
    - To load bundle files they must be listed in the mod.json file (see below)
- 4. Music files and folders
  - Standalone music files in any of the following formats: MP3, WAV, AIFF, WMA

- Now allow disabling base game music in favor of mod music
- Added initial modding user interface to allow multi-mod loading, including priority and enable/disable
- Added new user-customizable Mod Profiles to allow saving and reloading a collection of ordered mods
- Multiple profiles will allow for different configurations of enabled mods
- Mods are now enabled and applied when exit the mod screen (no need to restart the game)
- Now allow overriding GameEvents.xml by name (easier to include in mods)
- GraphicsSettings.xml files (Galaxy, System and Location) can now be included in mods and will override default files in base game
- Improved mod support for ship components and research projects (allow non-sequential Id values)
- Mod descriptions now support simple markup for text formatting
- Upgraded layout and display of Mods screen

#### **AI IMPROVEMENTS**

*The AI improvements in this update are the result of a lot of work and testing and should result in a significant improvement in the ability of the AI empires to keep up with and be competitive with the player. Please start a new game with the Aurora update for best results.*

- AI empires now more careful to maximize funding for research and colony growth to ensure full research and growth rates, thus making them more competitive with the player
- Tweaked some AI research priorities
- Now use Race.PreferredWeaponComponentIds for more targeted research
- More focused on a single weapon branch per type (close-in, stand-off, etc)
- Slightly increased effect of galaxy aggression level so that empires more likely to declare war, etc
- Depending on game difficulty level, ensure have antagonistic races next to player to increase tensions
- Automated military ships now properly cancel guard mission when target changes empire
- Fixed wrong ship hull names for additional items in description of Build Ships advisor suggestion
- When acquire abandoned ships or bases now automatically mark acquired design for ship or base as obsolete so that unused for any other construction or retrofits
- AI empires no longer pay research project initiation costs when difficulty level is normal or higher
- AI empires require progressively less research funding at higher difficulty levels (cheaper to fully fund research)

#### **GENERAL UI IMPROVEMENTS**

*Many improvements were made to the UI based on experience and player feedback. Many of them will make playing in a more manual playstyle easier than it was, but also should make general empire management much easier. There is also a new Free Form camera mode!*

- Added new cycling keys for idle ships and fleets: J for next idle construction ship (shift-J for previous), Z for next idle exploration ship (shift-Z for previous), N for next idle military ship (shift-N for previous), H for next idle fleet (shift-H for previous)
- Changed Control Center list item sort options: 'Distance from Spaceport' is now 'Distance from Selected Item or Capital,' meaning distance from currently selected item in Selection Panel, or from empire capital if nothing is selected
- Hovered Control Center list items now have callout line leading from list item to position of item in galaxy
- Added fleets of own empire to system-level view summary (previously fleets were only shown in galaxy-level summary view)
- Tooltips for each race in Colony Population Policy screen now also shows their suitability for that colony
- Extended Escape keypress (close screen) to include File Load/Save dialog, Galactopedia and Colony Detail screen
- Added colored border to Terraforming Facility image in Planetary Facilities List when colony has reached maximum terraforming level (better visibility and indication that facility should be dismantled)
- Reduced items in Display Mode list (Game Settings screen) to one item per resolution (exclude refresh rate)
- In Key Mappings screen fixed key mappings incorrectly displaying previous unapplied values when click Cancel button and then re-enter screen
- Expanded message log is now properly closed when view Ship Design (previously left in half-expanded state)
- When have empty Colony Ship selected, can now choose which colonist race to load when right-click on colony for popup menu mission options (as long as population for race is above minimum threshold of 500 million)
- Now properly reset cached values for resources mined and resources known in Known Resources list when load or start new game
- Fixed Known Resources list being blank when open by clicking on resource in Selection Panel and current filter settings exclude the selected resource
- Added filter option 'Distance from selected item or Capital' to Dangerous Locations list
- Extended callout lines to most lists in Control Center (troops, characters, planetary facilities, artifacts, special locations, etc)
- Fixed Weapons Report screen sometimes being blank
- Added Race Suitability to each race hovertip in Population screen (like Pop Policy pop-out screen)
- Fixed faulty text formatting in facility tooltip in Troop Ground Report screen
- Fixed wrong size for Ship Hull screen when UI scaling is set to Small
- Ships and bases that cannot normally assign missions to (e.g. privately owned) will now generate right-click popup menu options when have artifacts onboard that need transferring (select ship or base with artifact, right-click on destination)
- Allow rapid removal of messages when repeatedly right-click in message area
- Fixed game menu scaling incorrectly when change UI size
- Added option to right-click popup menu to retrofit or retire ships at colonies of own empire
- Included news messages to all other known empires when civil war occurs in an empire
- Ensure cannot build same planetary facility twice at same colony, even when attempt to exploit advisor messages
- Fixed damaged ships still showing red background in Selection Panel even when fully repaired

#### **SHIP DESIGN UI IMPROVEMENTS**

- Added extra buttons to Design List screen: Mark Selected as Auto/Manual Hull Upgrade, Mark Selected as Auto/Manual Retrofit, Mark Selected as Active/Obsolete. All of these buttons can operate on multiple selected designs at once
- Added new filter to Designs List screen: Manual Upgrade Designs
- Can now edit a ship or base design when it has been previously used, as long as there are no current ships or bases for the design

- Initial name for manually created ship designs now uses default faction design names (instead of 'New Destroyer', 'New Mining Station', etc)
- Altered crew capacity display in summary in Ship Design screen: now show 'used/capacity' instead of 'capacity/used'
- In the Ship Design screen, right-clicking on empty space in the design view now deselects the active component in the Available Components list
- In the Ship Design screen, shift-clicking on an available component will now add the component to the first matching empty bay (same type and within size limits)
- Ensure Save Designs process excludes deleted designs
- Improved Load Designs process to avoid duplicate designs when are equivalent to existing designs (same name, hull and components)
- Include hull name of design in advisor suggestion to build new base
- Adjusted label width for hull bonuses in Ship Design screen
- Added Ship Hull column to Designs List screen
- Altered Selection Panel display for ship design to show hull name instead of role. Same change for tooltips for fleet ships and multi-selected ships
- Added new column in Ship Hull Dialog: active design count
- Ship Design filter for 'State Ships' now also includes fighter designs
- Fixed occasional jerky display in Ship Hull screen for some user interface scaling sizes
- Added automation button to top of Ship Designs List screen, indicating current Policy ship design automation setting and allowing toggling between automated and manually controlled
- Now include hull names with designs listed in 'Other Designs That Upgrade To This Design' panel in Ship Design screen
- Added 'All Inactive' filter to Designs List screen

#### **SHIP AND FLEET UI IMPROVEMENTS**

- In Military Ships list, filters for 'Ships in a Fleet' and 'Ships Not in a Fleet' now include ships under construction
- Added Stop action button under Selection Panel when fleet selected
- Added rebindable keyboard shortcut for Stop action for ships and fleets. No key assigned by default, but can assign in Key Mappings screen

#### **RESEARCH UI IMPROVEMENTS**

- In Research screen can now shift-click to move research projects to top or bottom of queue
- No longer need to press shortcut key twice to open Research screen for first time in a game session

#### **TROOP UI IMPROVEMENTS**

- Added new filter to Troops List: At Selected Location. This shows only the troops at the currently selected colony or ship, allowing you to easily shift-click to select multiple troop units and make changes to them all (e.g. garrison/ungarrison). Double-clicking a troop unit in the Selection Panel will automatically open the Troops List with this new filter enabled, and auto-select all the troops at the location
- Can now multi-select troops in the Colony Detail screen and then use Garrison/Ungarrison or Disband action buttons for all selected troops (shift-click for range selection, ctrl-click to add/remove single troops to selection)

#### **GALAXY SETUP UI IMPROVEMENTS**

- In Start New Game screen now allow a mix of both auto-generated and manually-specified other empires
- Implemented display of all race- and govt-specific variations in Start New Game screen, Govt screen and Galactopedia to help players understand what differences exist.

#### **CAMERA MODE IMPROVEMENTS**

- Added new Free Form camera mode: can change camera elevation (as well as rotation) by moving mouse forward/back while holding down middle mouse button. Select this camera mode from the Change View button at bottom-right of screen, or use keyboard shortcut 'Tab'
- Locking camera view on hyperjumping ship no longer shakes
- Fixed issues with camera movement in top-down view mode: initial game start zoom-in, 'Show

- Me' message buttons
- Allow slightly further zoom-out in galaxy-level when in top-down view mode (allow viewing more of the galaxy)
- Fixed offset galaxy view when locked on to hyperjumping ship

### **SHIP BEHAVIOR**

- Assigning Refuel/Repair/Retrofit missions to ships no longer changes them to manually-controlled (but manually assigning any other mission types will still switch them to manually controlled)
- Changed default civilian ship tactics to Engage When Attacked (previously was Do Not Engage) so that will fire back at attackers
- Fixed ships sometimes getting stuck in constrained collision avoidance situations
- Fixed ships sometimes not clearing missions when mission target is destroyed
- Fixed ships sometimes not being able to fire at creatures when creature has strayed outside location

### **FLEET BEHAVIOR**

- Fixed Fuel Tankers sometimes cancelling mission when jumping with fleet
- Fixed automated invasion fleets sometimes stuck waiting indefinitely for sufficient invasion troops due to flawed assessment of assault pod range

### **SHIP DESIGNS, RETROFIT PATHS AND FLEET TEMPLATE CUSTOMIZATION**

*Major improvements to ship design retrofit paths and fleet template customization were implemented in response to many community requests for more fleet template and ship design customization options and which worked better with the new ship hull variations.*

*We now allow the player to set multiple designs/hulls per role in their fleet templates and also very specific upgrade paths for every ship design. The ship design and fleet template system are now designed to fully support the ship hull concept in all respects and to allow the player to choose how strict or flexible the templates are as well in following the specified designs.*

**Important Note:** *Ship designs are now the authoritative place for all ship upgrade paths. That means that if you specify a precise ship design in your fleet template and it has a newer design to retrofit to, the fleet template will update to that newer design as well. If you don't want this to happen, you need to specifically tell it not to do so by disabling the Auto-Upgrade setting in the fleet template.*

### **SHIP DESIGNS AND RETROFITS**

- Added Retrofit Path panel to Ship Design screen, allowing player to specify how a design should upgrade. Default retrofit path is to upgrade to the latest design for the same hull
- There are also now upgrade paths for ship designs. This will allow you to specify which design a ship or base will retrofit to. The default setting for designs will be to 'upgrade to latest design for Ship Hull' (instead of 'upgrade to latest design for Role' as it is now).
- Changed retrofit action button (below selection panel) to only retrofit to single design resolved from retrofit path defined for current design. To instead see and retrofit to any active design for the role, you can now right-click the ship or base for a popup menu with a complete set of retrofit options
- When a spaceport is selected, the Retrofit action button now allows retrofitting across spaceport sizes (small, medium, large) when there are active designs for other size roles. This is in addition to the existing behavior where right-clicking on the spaceport will allow retrofitting to any active spaceport design of any size
- Upgrade Design button now copies retrofit path settings from old design, unless old design was retrofitting to a specific design, in which case the new design uses the default retrofit path of 'latest design for largest hull for role'
- Upgraded ship design automation toggle to be per-hull instead of per-role (Designs List screen)
- Automated ship design now generates designs for each ship hull instead of for each role
- Reorganized layout of Ship Design screen, moving tactics and other settings buttons to right side
- Changed default filtering in Designs List screen to show all active designs
- Added new design upgrade option: Latest Design for Largest Hull for Role. This is the default setting for new fleet template items
- Improved design naming for all roles and races: now using race-specific design names for military ships. Also include hull name after design name to allow easier identification in tooltips, etc



- In Retrofit Path panel in Ship Design screen, ensure that upgrade design shown in brackets after 'Latest Design for Hull', 'Latest Design for Role' and 'Latest Design for Largest Hull for Role' is actually buildable for your empire (have required hull and components)
- In Retrofit Path panel in Ship Design screen, ensure that 'Other Designs That Upgrade To This Design' properly accounts for whether the current design is actually buildable for your empire (have required hull and components)
- Increased priority of Damage Control components when auto-designing spaceports
- In Ship Design screen, properly exclude obsolete designs when evaluating 'Other Designs That Upgrade To This Design' (unless specific retrofit design)
- Auto-generated player ship and base designs now set default Retrofit Path to 'Latest Design for Hull' when there are multiple hulls at largest size for role, i.e. preserve multiple specialized designs per role
- Immediately refresh latest designs for role/hull when change design status (active/obsolete) in Designs List screen so that retrofit action button always shows proper retrofit design
- Ensure "Save and Exit" button in Ship Design screen always properly indicates that design can be saved, even when components are not editable (design in use). In other words, always allow changing and saving Retrofit Path or Tactical settings for a design

### **FLEETS AND FLEET TEMPLATES**

- Altered how fleet templates work. Can now add items free-form to allow multiple items per role. Can specify items by shiphull as well as specific design and role
- This allows you to focus more on Ship Hulls instead of Roles, giving more options for specialized fleets
- Added new buttons in Fleet Template screen: allow role up/downgrading and allow trimming excess ships. Turn these off to enforce strict adherence to fleet template for ship roles/hulls/designs (e.g. Top Up Fleet button)
- Improved logic to trim excess fleet ships
- Improved how fleet template AI evaluates 'Latest Design for Largest Hull for Role' so that resolves to latest active design with largest hull (i.e. try other smaller hulls until finds active design)
- When a ship design is made obsolete but has an explicit upgrade path to a new specific design, any fleet templates that use the old specific design are now auto-upgraded to instead use the new specific design (i.e. no need to separately update the fleet template. However this auto-upgrade of fleet templates only applies to specific explicit designs, not 'Latest for Role', etc)
- Fixed wrong ships sometimes being added to fleet when generating new fleet using Form At button in Fleet Template dialog (not matching design specified in fleet template)
- Building fleet from template (Fleet Template screen) now always builds ships when not already available in empire, even when does not require specific design (e.g. Latest for Role)
- Fixed Fleet retrofit logic to align with expected retrofit designs for both fleet template and individual ship retrofit paths
- Ensure do not get double the number of expected ships in new fleet when build from Fleet Template List screen using option at 'Any construction yards in empire' (when selected fleet template has specific designs)
- Ensure Form At and Build At buttons in Fleet Template List screen have correct disabled status when first enter screen but have not yet selected a fleet template
- Now exclude consideration of ship maintenance costs when building ships for new fleets when building via the Fleet Template screen (ensures always built as long as have money and resources)
- Updated FleetTemplates.xml to ensure default fleet templates use setting 'Latest Design for Largest Hull for Role'
- Periodically update fleet templates so that any specific designs that have become obsolete are automatically upgraded to the next non-obsolete design in it's upgrade path. This keeps fleet templates up-to-date as new designs are created and old ones become obsolete
- Added corresponding setting in fleet template dialog to enable/disable auto-update of specific designs in fleet templates
- Improved logic when determining home bases for defend fleets (less churn)

### **BUILD ORDER SCREEN**

- Now show hull name after design name
- Default selection for each role to latest design for largest hull for role

### **RESOURCES AND FREIGHTER LOGISTICS**

- Significantly slowed mining rates for mining components
- Significantly slowed mining rates for mining components
- Improved mining ship target selection so that prioritizes missing critical resources even when mining target is already queued to build a mining station
- Altered automated resource stock levels for bases not at colonies: no longer have fuel stock level unless mine fuel at location; note that this means most bases will depend on energy collection for their defenses/weapons, we plan to adjust this further in the future
- Improved freighter resource fulfillment by further increasing amount fulfilled over stock level

### **CONSTRUCTION**

- Improved display of construction/repair progress percentage in tooltip for items in construction yards in Selection Panel - now include components under repair to give more accurate percentage in these cases
- Ensure properly take ownership of all ships in construction yards (or destroy if cannot) when invade and conquer enemy colony
- Fixed research stations and resort bases sometimes not able to be built using construction action buttons (under Selection Panel) when research or scenery bonuses at location come from facilities or ruins
- Ensure abandoned repaired ships or bases are always acquired by repairer

### **INTELLIGENCE MISSIONS**

- Added mission success chance to each mission type and target in Spy mission screen
- Indicate current research project in targets in Spy mission screen
- Rebalanced intelligence mission difficulty level so that there are fewer very low success chances
- Rebalanced intelligence mission outcomes so that less captures (more partial successes and failures instead)
- Updated Intelligence Missions article in Game Concepts section of Galactopedia

### **DIPLOMACY**

- Increased aggression and likelihood of wars, especially on higher galaxy aggression levels

### **RESEARCH**

- Research output from colony populations now diminishes greatly for population over 100 billion. This increases importance of research stations as main source of research output
- Altered research project category for Advanced Star Fighters to Fighter Bay

### **EXPLORATION**

- Fixed some systems not being fully explored when have deeply hidden items

### **PLANETARY FACILITIES**

- Additional check when approving advisor message to build new planetary facility: ensure not overbuilding unique empire or galaxy wonder
- Reduced frequency of advisor messages for Building Planetary Facilities

### **DANGEROUS LOCATIONS**

- Fixed bug where sometimes could not clear queued investigation of dangerous locations

### **FACTION DIFFERENTIATION**

- Added extensive new features for better faction differentiation
- Added migration modifier to governments
- Added government-specific leader titles (President, Prime Minister, etc)
- Added explicit value for ImportanceOfOthersReputations to Races.xml (already existed for Governments.xml)
- Added new field to both Races.xml and Governments.xml: StartingGameEventNames
- Can be used to specify Game Events that will be executed at game startup for empires with the relevant race or government type, allowing for greater differentiation between different races and governments
- Typical uses could be to provide additional tech, facilities or ships/bases for a particular race or government

## **LEADERSHIP CHANGES**

- Implemented Leader Changes and related events for each government type
- Added small chance of civil war and empire split when have highly disruptive leadership change

## **CHARACTERS**

- Slightly reduced typical amounts for spies and other character types (based on empire population)
- Characters picked up in escape pods now properly either join your empire (pirates) or are imprisoned
- Automated character handling will now dismiss any characters with poor skills, not just spies
- Further reduced chance of negative character traits
- Fixed bug where spies sometimes could not assign intelligence missions (missing mission types) due to faulty mod
- Reduced chance of some negative character traits (DoubleAgent for Spies, Corrupt for Leaders)
- Ensure can properly view characters of own empire, even when imprisoned. However cannot interact with them (cannot assign missions, change location or dismiss)
- When character is captured, ensure clear any in progress location transfer for them

## **COLONIZATION**

- Automated colonization logic now more willing to colonize independent colonies, even when do not have suitable population
- When a planet is colonized and thus removes orbiting bases, any troops/characters/artifacts at the removed bases (of the same empire) are now automatically transferred to the new colony

## **EMPIRE BONUSES**

- Bonuses from secondary races in empire now applied proportionally: gain complete bonuses when race is at 50% of total population, and proportionally less when below 50%
- Ensure include empire bonuses from colonies themselves when calculating empire bonuses (e.g. bonus for planet or moon)
- Ensure empire bonuses from colony races are always proportioned based on amount of race in empire

## **MIGRATION**

- Rebalanced colony migration factors to encourage more migration
- Fixed passenger ships sometimes performing repeated migration to and from same target when in empire with low number of colonies
- Further tweaked migration to ensure that always have migration sources, even when all colonies are considered favorable (in this case large colonies will be selected as migration sources)

## **INDEPENDENT COLONIES**

- Lowered overall number of independent colonies when start a new game
- Independent colonies no longer invite to colonize when colony ship already assigned or beyond fuel range

## **PIRATES**

- Reduced number of pirate factions by about 30%
- Ensure that story-line pirate tech levels are reduced when you lower pirate strength in Start New Game screen
- Extended minimum time before pirate raids begin against a faction
- Fixed bug where pirate factions were acquiring tech too quickly and thus had too much tech available for espionage
- Fixed bug where pirate factions would sometimes generate many scientists resulting in too many scientists being gained by empires that destroyed pirate bases

## **MUSIC**

- Fixed bursts of music sometimes playing even when volume is zero

## **OTHER**

- Fixed rare potential issues with resolving mission targets
- Fixed bug where deleting files in Load/Save dialog subsequently allows starting a non-existent game using the Continue button
- Hive ships no longer generate characters (e.g. admirals)
- Fixed flag color issue when starting second game in session

- Increased mesh LOD threshold when determining whether to render component meshes, so that ships and bases with large exterior meshes (e.g. engine pods) stay in view longer as zoom out

#### **DATA CHANGES**

- Added extra general component bays to Troop Transport hulls to ensure sufficient invasion fleet range (only available when starting a new game)
- Added differing startup settings for each government type (starting tech, facilities, etc)
- Fixes to various ship hull issues
- Additional balance changes to missile weapons and phased blasters and beams
- Balance changes to armor, shields and damage repair components

#### **v1.0.8.6 – 25<sup>th</sup> November 2022**

*This new official update includes some very important bug fixes and performance improvements as well as further improvements across a wide range of gameplay areas. It also allows you for the first time, using the Game Editor, to switch the empire you are playing during the middle of a game.*

#### **CRASH FIXES**

- Fixed crash when reviewing fleet escort ships
- Fixed rare crash while fleet performs patrol mission
- Fixed rare crash while querying display adapter
- Fixed rare crash when resolving ship jump path location
- Fixed potential crash when use faulty string formatting placeholders in colony event descriptions
- Fixed rare crash when determining jump exit point
- Fixed crash when editing resources at planet in Game Editor
- Fixed rare crash when ship escorts another ship
- Fixed rare crash when reviewing fleet lead ship
- Fixed crash when loading character animations
- Fixed rare crash when making research breakthrough
- Fixed crash when calculating construction yard wait time
- Fixed crash when ship enters hangar
- Fixed crash when rendering exploration section header

#### **PERFORMANCE**

- Improved performance, especially in large battle scenes

#### **FLEET AND SHIP BEHAVIOR**

- Reduced delays when carriers (and fleets) are waiting for fighters to board before jumping
- Improved ship collision avoidance to better allow missions where target is close to planet or other large body
- Improved fleets investigating and clearing dangerous locations: now better focussed on priority locations for colonization, research and mining

#### **FUEL TANKERS**

- Improved fuel tanker evaluation of when to refuel fleet ships versus load more fuel: more likely to refuel fleet ships, even when have to wait for them to exit their current jump

#### **COLONIZATION**

- Automated Colony Ships no longer pre-load colonists for non-queued colonization targets when target does not meet minimum suitability threshold defined in empire policy. This eliminates repeated load/unload of colonists in some situations
- Fixed bug where maximum colonization range was sometimes being applied incorrectly, improperly excluding some colonization targets
- Automated colonization now more willing to colonize independent colonies even when have unsuitable race

#### **EXPLORATION**

- Exploration ships now better at prioritizing planets and moons before asteroids when exploring a location
- Ensure exploration countdown always reset between exploration targets, especially when performing Explore System mission

- Ensure correct message shown when investigate ship that explodes

#### **ABANDONED SHIPS AND BASES**

- Ensure construction ship repairing abandoned ships or bases now take ownership of ship when complete, even when other ships are nearby

#### **DANGEROUS LOCATIONS**

- Improved logic to review and remove Dangerous Locations where threats are no longer present
- Now indicate dangerous locations in additional lists, e.g. Abandoned Ships and Bases, thus helping player to avoid queuing construction/repair at locations with threats present

#### **RESEARCH**

- Changed research project prerequisite path minimum count to default to 1 instead of total prerequisite path count (can override with PrerequisiteProjectsMinimumPathCount)
- Empires now less likely to crash research higher level research projects (instead use money for other items)
- Improved research project selection in various areas

#### **DIPLOMACY AND EMPIRE REPUTATION**

- When an empire is vassalized it will immediately end all wars with other empires unless those other empires are already at war with subjugating empire
- Ensure diplomacy trade offers always exclude special locations where abandoned ships or bases have already been claimed by other empires
- Updated some empire reputation incident amounts and decay rates

#### **SLAVERY**

- Slavery population policy now properly adds to colony unhappiness ('We are enraged at your enslavement of our population')
- Increased unhappiness impact on other colonies from slavery and extermination population policies at any colony ('ENSLAVED RACE are unhappy being part of our RACE empire')
- Slavery population policy now severely slows population growth and assimilation

#### **CONSTRUCTION AND REPAIR**

- Fixed bug where bases built at independent colonies could not be retrofitted unless the colony had adequate resources
- Increased range at which bases and colonies will auto-construct/repair damaged or incomplete ships
- Altered automated ship and base construction to give higher priority to initial research station over additional exploration ships and military ships

#### **FACILITIES**

- AI now properly also considers income increase from improved quality when determining whether to build terraforming facilities at a colony

#### **USER INTERFACE**

- Enemy Targets list filter options now show correct list items even when warring empires change (e.g. a war starts or ends)
- Ensure Mining Stations list shows mining stations at locations with no known resources when sorting by priority
- Ensure system summary (bottom-middle of screen) refreshes when zoom to selected ship
- Fixed bug where tour window was sometimes not properly displayed

#### **EMPIRE COLORS AND FLAGS**

- Improved empire color selection to minimize similarity between empires
- Fixed bug where empire colors could sometimes be white (should only be for independent colonies)
- Changed Flag selection dropdown in Start New Game screen to display available flags in grid layout instead of vertical list

#### **GAME EDITOR AND TESTING**

- Added ability to play as any standard empire in the game. Can switch player empire in Game Editor (Edit Empire > switch button). This is included for our own testing to help us improve the AI, but you may also find it a fun option. If you spot a problem with the AI decision-making while using this, please do report it to us.
- Ensured that Suppress All Popups game setting always works, even for initial pirate encounter.

With this change and using Rule in Absence and the "Always Investigate" exploration policy settings, fully automated games without interruption should now be possible.

#### **SOUND**

- Ensured sound effect volume always applies for button clicks, etc, even in main menu

#### **DATA**

- Reduced costs for Diplomacy tech projects
- Corrected some typos in game events
- Added additional late game research paths from Haakonish and Zenox unique weapons
- Corrected a research bonus issue with the Koloros Medical facility

#### **OTHER**

- Fixed debris fields often being generated at home planet
- Fixed Hive ships sometimes not mining fuel properly
- Added missing automation setting in race policy files

### **v1.0.8.3 "Pathfinder" – 1<sup>st</sup> November 2022**

*This massive update takes a series of steps towards completing our current roadmap to both fix reported issues with Distant Worlds 2 but also to improve a variety of gameplay areas as part of ongoing post-release support.*

*Based on community feedback, over the course of two months of development for this update, we have significantly improved and in some areas redesigned Research, Diplomacy and Reputation, Subjugation and Wars, Colonization and Migration, Performance and Memory Management, User Interface, AI and Ship and Fleet Behavior.*

*Thanks to the generous work of composer / sound designer Jeff Dodson of rainfall.tv, we have also added new significantly improved and rebalanced sound effects for most components and weapons, explosions, etc. Jeff's trailer sound design work is heard in small projects like "Star Wars" and should help spice up combat among other things.*

*Finally, we've doubled the available empire flags and colors and added guidance on the main galaxy setup for which galaxy sizes are best suited to your computer hardware. We strongly recommend starting a new game with 1.0.8.3 in order to benefit from all the changes and improvements it has to offer compared to the last official update. We wish your empire success as you travel to Distant Worlds!*

#### **CRASH FIXES**

- Fixed game not starting for some players who had other software that improperly mapped the wrong versions of shared files (freetype.dll)
- Fixed rare crash when determining jump path time to destination star system
- Fixed rare crash when determining docking bay parking spot
- Fixed rare crash when calculating docking position offset
- Fixed rare crash when inserting ship into docking wait queue
- Fixed crash that sometimes occurred when declaring war
- Fixed crash when drawing ship weapon summary
- Fixed crash when ship assigns exploration mission
- Fixed crash when rendering background room for character
- Fixed rare crash when drawing ship health summary
- Fixed rare crash when unloading troops at colony
- Fixed rare crash when fleet checks whether should invade colony
- Fixed rare crash when displaying trade offer with independent colony locations
- Fixed crash when determining random docking position for ship
- Fixed crash when drawing empire economy
- Fixed crash when showing some tour screens

#### **START NEW GAME SCREEN**

- In Start New Game screen added warning borders and tooltips to indicate when the largest galaxy sizes may cause performance issues on some systems, especially if played into the late game or without victory conditions.
- Ensure player starting relation level for other empires (Start New Game screen) excludes pirate protection and selects correct trade treaty (RTA, LTA, FTA)

## PERFORMANCE AND MEMORY MANAGEMENT

- Significant performance improvements, especially for large late-game galaxies
- Improved general memory management
- Improved memory management when rendering character animations
- Galaxy-level star drawing and some other rendering now uses instancing, improving rendering performance
- Further improved rendering performance in Control Center lists, especially in large late-games

## SOUND DESIGN

- Thanks to generous work by Jeff Dodson of rainfall.tv, we have added new significantly improved and rebalanced sound effects for most components and weapons, explosions, etc. Jeff's trailer sound design work is heard in small projects like "Star Wars" and should help spice up combat among other things.

## DIPLOMACY AND REPUTATION

*This area has had a comprehensive overhaul, both to fix reported issues but also to rebalance reputation and relationship modifiers (including the penalties for being stronger than your neighbors), how reputation interacts with relationship and colony happiness and how much reputation affects how empires see each other and how your people see their own empire.*

*We've also added the missing Subjugated Vassal relationship and expanded the role and feedback related to Ambassadors, which are needed for the more advanced treaty types and also improve the rate of improvement for positive long-term relations and accelerate the decay of negative relations when assigned to an empire.*

*Finally, a lot of work went into fixing issues related to how wars end and how willing the AI was to negotiate the ends of wars correctly. All of this should make Diplomacy more rewarding as a playstyle, but also significantly decrease problems related to diplomacy and reputation for more warlike factions.*

- Subjugated Vassals:
  - Empires that are losing war now much more likely to be willing to end the war, and even to become your subjugated vassal when losing badly
  - Added Subjugated Vassal diplomatic relation type (see Galactopedia for details: Game Concepts > Diplomacy - Treaty Types)
  - Clarified description of treaty trade item for Subjugated Vassal in Diplomacy Trade screen ('Offer to become Subjugated Vassal')
  - Tooltips on Peace and Subjugation trade items in diplomacy trade screen now include indication of value of extra incentive required when other faction wants additional inducement to end war
  - Ensure vassal tribute income properly shown in Projected column of Annual Income section in Economy screen
- Diplomatic Strategy:
  - High-level diplomatic strategy now pays more attention to overall situation for faction, not just one-on-one relations. Thus more likely to seek out allies against threatening neighbors, even when would not normally otherwise ally with faction.
  - Diplomatic strategy now also affects empire evaluation of neighboring strength. Concern about strength will be greater if their diplomatic strategy towards you is a negative one.
  - Preserve existing diplomatic treaty when matches current strategy for faction, even when evaluation drops below typical level for the treaty (e.g. advisor suggestions)
  - Now force immediate update of each faction's diplomatic strategy whenever conclude trade, change treaty, etc in diplomatic conversation screen
- Pirate Wars:
  - Fixed bug where wars would start with pirate factions when they raid your colonies
  - Ensure capturing pirate base eliminates pirate faction (not just when destroy pirate base)
- Diplomatic Reputation:
  - Capped maximum and minimum reputation levels
  - Adjusted soft cap to impact of reputation in diplomacy
  - High reputation now also reduces envy factor from other empires ('We are envious of your huge strength and power')

- Reputation impact from events is halved when above or below high or low thresholds, meaning that extreme reputation levels, once achieved, are slower to shift
- Reputation factors on average now decay much more slowly, especially if your reputation is strongly positive or negative
- Less concern over others' reputations when you and other faction both have positive or negative reputation levels, i.e. more concerned when other faction has opposite reputation to you as well as a significant reputation gap
- You can now gain positive reputation from additional actions such as releasing prisoners, signing new treaties, researching diplomacy techs, destroying hive ships and planet destroyers
- Rebalanced all reputation impacts and decay rates
- No negative reputation impact from espionage against pirates
- Diplomacy trend values update faster than previously. Reputation trend values update much faster than previously. This means that as your relationship or reputation change, it will take less time for other empires to notice and reflect that change in their relationship with you.
- Honoring defense treaty by declaring war on aggressor no longer incurs war justification penalty or war grace period penalty ('too soon since last war')
- Fixed bug when modifying empire reputation near minimum or maximum limits
- Updated Empire Reputation Galactopedia article to include explanation of Slavery and Extermination colony population policies
- Reduced overall impact of very good or very poor reputation on colony happiness
- Once empire reputation goes over +10 or below -10 then has diminished impact on colony happiness
- Diplomatic Relationships:
  - Updated values for long-term diplomacy effects for some treaty types to better balance diplomatic progress
  - Capped display of diplomacy trend values so that do not show misleadingly high or low values even when have fast-moving trend (trend magnitude never larger than target value)
  - Ensure clear some positive diplomacy values with other faction when they bombard, invade or destroy one of your colonies
  - Lowered soft cap for some diplomacy factors: relationship and beneficial treaties with friends and enemies
  - Fixed buggy display of diplomatic relation incident trend values when transition from positive to negative or vice versa
  - Ensure cancel treaties with other faction when they bombard, invade or destroy one of your colonies
  - Adjusted soft cap for some diplomatic factors: relationship with friends, relationship with enemies
- Ambassadors:
  - Some high-level treaty types now require an ambassador to be assigned to the foreign capital before they will be accepted
  - Ambassadors now properly apply diplomacy bonus to modify evaluation of your empire by assigned faction (when at faction capital)
  - The diplomacy screen now correctly shows the consolidated effect of any assigned ambassadors and your leader on a given faction
- Trade and Negotiation:
  - Diplomacy trade panel adds new functionality to move view to trade items that are visible to your faction. Click 'eye' icon at right side of trade item
  - Bases available for trade in diplomacy trade screen now show as 'Unknown Base' when not visible to player
  - Ensure all techs valued properly in trade deal screen (none should be zero unless truly worthless to other faction)
  - Fixed tech trading sometimes excluding research projects that you do not have access to (e.g. projects that your tech tree has no path to, even though other faction has researched)



the project). Note that tech trading does properly exclude projects based on your tech level in a research area, but this fix now deliberately includes projects that you may not have a path to (when appropriate for your tech level). Note that this fix also applies to some other situations where you can acquire tech, e.g. when conquering an enemy colony, when using spies to steal tech.

- Diplomatic Techs and Assimilation:
  - Colony population assimilation rates for specific races now improved by researching diplomacy projects in tech tree at rate of 10% per improved relationship point
- Treaty Fixes:
  - Ensure Intelligence Sharing treaty now properly shares results of espionage missions with partners
  - Ensure Research treaty properly gives bonuses to each factions research speed
- War Resolution:
  - Lowered threshold from war losses where an empire will consider ending a war (more likely to end war when losing badly)
  - Empires now more willing to offer incentives to end unwanted wars
  - Unhappiness from war weariness now applied to colonies with race and govt mitigation factors (mainly based on war weariness reduction), so that aggressive factions now have less unhappiness from war weariness and thus less negative impact from wars
  - Empires now more likely to honor minimum interval between wars with same faction
  - Vassal empires now include minimum interval between wars with same faction when considering whether to rebel against parent empire
  - Fixed bug where diplomatic incidents were being applied to wrong empire when declare war while still have Defense or Non-Aggression treaty
  - Fixed bug where offers to end war sometimes cannot be accepted

## RESEARCH

*This is another area which benefited from a significant amount of development attention. Based on community feedback, we found that Random research in particular was not working as intended.*

*The intention was always that when choosing Random research, some techs or sub-trees could be missing from the research tree. This does not mean that they are absent from the game, but that they would need to be enabled through trade, espionage, exploration, salvage or conquest rather than just through research. We also found that some random paths were being incorrectly generated and thus required too many pre-requisites for some projects or made others available that should not have been. With this update, Random research issues should be resolved.*

**We also fixed a variety of other issues and began improving the research AI. More work in this area will come in the next series of updates.**

- Altered how research project prerequisites work: now often only require a subset of all the prerequisites for a project instead of all prerequisites as previously. This fixes the issue where race-specific techs added to the required prerequisite paths instead of just being a part of them.
- Research project bonus requirement amounts now scale with galaxy size - larger galaxies have higher research bonus threshold requirements due to being easier to find the necessary research bonus locations
- Fixed bug where research projects with fallback paths were sometimes not appearing on tech tree when should have
- Now exclude race-specific tech from non-playable races when stealing or trading tech, or acquiring through other means (e.g. colony conquest)
- Tweaked which research projects an empire can acquire through colony conquest
- Tweaked which research projects are available for trade and stealing (spy missions): spies can now perform repeated steal tech missions for same project even when visible to their empire
- Set default maximum concurrent research projects to 1 in empire policy
- Fixed some research projects remaining invisible after steal tech spy mission or acquire through other non-standard means
- Fixed bug where minimum path count for some research project prerequisites were defaulting to

- one, which was incorrectly reducing the number of prerequisites that needs to first be researched
- Fixed research projects sometimes incorrectly showing up on tech tree when no parent paths (when using randomized research)
- Fixed higher level research projects sometimes improperly being researchable even when have no path to them from base of tech tree
- Fixed some research projects not generating with all required prerequisite paths
- Ensure pirate factions exclude some research projects at game start that they value lower (colonization, facilities, diplomacy), thus not being available to trade or steal from them
- Now allow AI to initiate research projects even when uses reserved spending (colony ships, wonders) when there are no projects in the queue and the project initiation cost is relatively low
- Slightly reduced AI research priority for diplomacy techs
- Slightly reduced AI research priority for some planetary facilities, especially research facilities

### **MIGRATION, COLONIZATION AND COLONY POPULATION POLICY**

- Ensure migrating populations honor colonization minimum suitability level from empire policy, i.e. race does not migrate to a colony unless suitability is +20 or better (default level)
- Automated colony ship construction now considers preferred colonization race (suitability) and location of colonization target when determining where to build new colony ship (first choice is closest colony to target with preferred colonization race)
- Added further improvements when selecting construction locations for automated colony ships, especially when handling multiple simultaneous manually-queued colonization targets
- Fixed bug where colony ships could sometimes continually load and unload colonists but never colonize a target, especially when have many queued colonization targets and many colony ships
- Reduced colonies constantly rebelling when using enslave or exterminate policy. However note that using these policies will increase unrest of affected races at your colonies, likely eventually leading to rebellion
- Fixed issue where constantly rebelling colony with population set to exterminate would push population above 30 million, thus never completing extermination
- Ensure colony is removed when all of its population is exterminated (population policy)

### **FLEETS AND SHIPS**

- Tweaked default fleet templates: larger Attack and Invade fleets
- Ships added to fleets via topup now check whether have enough fuel to reach fleet, if not then first refuel at nearby location before proceeding to form-up with fleet
- Automated generation of invasion fleets now also checks whether have enough existing troops or spare troop maintenance to supply troops from army template for new fleet
- When a ship changes fleets it now auto-cancels any escort missions for old fleet (escorting fleet capital ships)
- Ensure ships that get stuck inside stars/planets/etc can always properly extricate themselves without other factors overriding that behavior
- Automated construction ships now more willing to repair abandoned ships and bases when no other bases to build
- Capture ship missions now assigned and retained even when no assault pods currently available (cool down timer)
- Now indicate unavailable assault pod status in Selection Panel and Weapons Report window when ship is assigned a Capture mission
- When a colony is invaded and conquered by another faction then non-military ships from the previous empire clear any missions at the colony (when two empires are still at war)
- Fighters onboard carriers or bases no longer affected by location effects (storms, etc)
- Ensure fleets that are manually assigned to attack enemy fleets at same location always carry out mission, even when not at war
- Reduced default ratio of military ships not in fleets (empire policy)
- Slightly reduced number of raid fleets for empire
- Changed default engagement range for Invasion Fleets from 50% Fuel Range to Nearby
- Mining ships now more careful to select mining targets within fuel range, including whether inside nebulae clouds

- Troop transports in invasion fleets that are invading an enemy colony now attempt to better coordinate assault pod launch (troop drop) so that close together instead of piecemeal landing. Also indicate when waiting for extra invasion forces in mission description in Selection Panel
- Fixed bug where a ships intercept weapons were sometimes incorrectly being used to bombard an enemy colony even when only assigned attack mission against colony (not bombard)

### **CONSTRUCTION AND SHIP DESIGN**

- Fixed Build Order screen sometimes building wrong design for role
- Slightly adjusted construction balance for military ship types: generally fewer escorts and more larger ships
- Increased military ship building levels
- Ensured default design templates for defensive bases include Ion Defense components
- Fixed ships not always being upgraded when research new tech
- Ensure Energy To Fuel converter component works properly

### **UI IMPROVEMENTS**

- Added new button to Population Policy screen: apply policy to all colonies of this type (e.g. Marshy Swamp, Volcanic, Sandy Desert, etc)
- Enabled shift-click to multi-select range of designs in Designs List screen
- Control Center now pauses list updates while hovering over list items (list items retain order) to avoid having to deal with list changes while trying to take a list action
- Now immediately updates right-click mission for hovered item when select an item via hotkey (no need to move mouse), e.g. allow immediate right-click attack of hovered enemy target when select fleet via hotkey
- Made it clearer in user interface when undertaking an action that will very negatively affect your reputation: Bombardment, Slavery and Extermination colony policies, declaring war in wrong situation (insufficient justification, too soon since last war, existing Non Aggression treaty, existing Defense treaty), invading independent colonies, invading colonies when not at war, destroying colonies
- Now show fleet jump range for selected fleet in galaxy view as dashed orange circle (in addition to fuel range)
- Ambassador contributions to diplomacy are now properly called out in the diplomacy tab
- Indicate when characters drawn in list items are transferring to new location (transparent image with tooltip explanation)
- Immediately update system view summary (bottom-middle of screen) when double-click item to change view
- Added explanation in tooltip of action button when cannot build mining station or other base at location due to missing active design
- Fixed mined and known locations amounts sometimes being out-of-date in Resources list
- Fixed missing callout lines and tooltips in summary panel (bottom-middle of screen)
- Fixed height of text panel in Tour screen sometimes being too short
- Fixed some scrollable text panels missing their vertical scroll bar when text is higher than panel
- Ensure empires have different colors and flags even when multiple empires of same race
- Doubled the number of available empire flags
- Fixed non-clipped rendering artifacts in Start New Game screen
- Made galaxy nebula clouds more visible
- Fixed some text problems with fullscreen messages

### **COLONY MANAGEMENT**

- Slightly adjusted planetary facility building levels, colony population and development should be larger before some facilities are built
- Reduced population level for building a small spaceport at a colony in default policy settings
- Increased target tax rate for medium-sized colonies to +20 (from +10) in default policy settings to encourage faster growth
- Ensure colonies always have proper resource stock levels for building bases and ships
- Avoid using reserved spending to build planetary facilities when automation is Suggest. Instead wait until have funds then suggest to player

## **EXPLORATION**

- Ensure range for discovering lost colony exceeds exploration range so that exploration ships always discover
- Fixed new bug where exploration ships were sometimes stopping exploration beyond home system
- Slightly reduced tech level of ships in most debris fields
- Ensure abandoned ships and bases do not use excessive race-specific tech

## **GAME EVENTS**

- Ensure plagues and disasters do not strike same colony too often (no simultaneous plagues, minimum interval between)
- Extended Game Events so that can have multiple filters for TriggerRaceIds and NonTriggerRaceIds
- Moved AllConditionsMustBeMet flag on Game Event and Actions (no longer part of Conditions list)
- Fixed minor text issue with some Hive threat messages
- Fixed minor text layout issues for some ruin discovery messages

## **IN-GAME EDITOR**

- Changing a star name in game editor now also changes the corresponding system name on the galaxy map

## **MODDING SUPPORT**

- Now support overriding loaded data items by Id value for all XML file types (Races, Research Project Definitions, Ship Hulls, Troop Definitions, etc) based on additional data files that start with the same name (as a prefix). IDs should still be unique across all files.

## **OTHER**

- Fixed time to transfer character to new location sometimes being excessively long
- Ensure message filter empire flag images are properly loaded
- Ensure pre-expanded empire colonies (at game start) have good suitability levels
- Added setting to Game Settings screen for opt-in/out of auto-sending anonymized error reporting
- Auto-delete game settings to ensure new default policy settings are applied in new games
- Ensure SavedGames folder exists before using Continue Game button
- Enabled Sentry error reporting
- Included all files in win-x64 folder that may fix freetype.dll error issues some had when launching 1.0.6.4

## **DATA**

- Various data file fixes, balance tweaks and updates, including some buffs for the Boskara and a fix for the Zenox starting with far too large a research bonus (the +20% was supposed to be only on their ancient homeworld, if you can find it)
- Rebalanced some government modifiers to make certain government types less corrupt and unhappy to ease economic challenges

### **v1.0.6.4 – 12<sup>th</sup> August 2022**

#### **ENGINE UPGRADE**

- Upgraded engine to Stride 4.1.0.1, which requires .NET 6.0. Please see the important notes above.

#### **RENDERING AND GAME SETTINGS**

- Added Vulkan/DXVK rendering option in game settings
- Integrated new command line option to use DirectX11, which resets any registry settings to use DXVK. To use add /use-dx11 as a command-line argument to DistantWorlds2.exe
- Persisted some previously unsaved game settings (Control Center List item size, rendering option toggles)
- Auto-detect and warn when PC is missing a vendor-specific display driver (i.e. when only Available adapter is 'Microsoft Basic Render Driver')

#### **PERFORMANCE IMPROVEMENTS**

- Minor performance improvements in some areas

- Avoid precaching some models and textures when have low video memory
- Added some extra game settings to allow disabling some rendering effects
- Extended multi-threading to better utilize CPU cores and provide better performance
- Improved texture memory management to improve performance and further minimize crashes
- Enabled early exit from many multi-threaded tasks to provide more responsiveness in very large games when exiting to main menu or initiating load or save
- Improved performance when calculating construction yard wait times for incoming ships, thus improving responsiveness in very large games
- Improved rendering performance by implementing shader instancing when drawing galaxy map highlights (list items) and empire territory circles/lines. These improvements are especially evident in large games when zoomed out to the galaxy level
- Improved performance when opening very large lists in Control Center (e.g. civilian ships)

### **CRASH AND BUG FIXES**

- Fixed various crashes relating to Stride rendering
- Fixed rare crash when resolving ship mission commands
- Fixed rare crash when calculating ship collision avoidance factors
- Fixed bug where location effects could sometimes linger for ships, disrupting subsequent movement
- Fixed crash when determining threat level for enemy ship
- Fixed crash when checking whether research project prerequisites have been researched
- Fixed rare crash when escorting target
- Fixed rare crash when calculating ship strength including fighters
- Fixed rare crash when drawing diplomatic relation details
- Fixed crash when click on non-item area of Resource Flow selection list
- Fixed rare crash when executing some game events
- Fixed crash when signaling docking completion for a ship
- Fixed rare crash when use planet destroyer
- Fixed crash when ship evaluates nearby threats
- Fixed issue where some older savegames could not be loaded
- Improved locking to reduce contention and fix crashes
- Fixed crash when checking ships within range at a location
- Fixed crash when finding shortest docking wait queue at a location
- Fixed rare crash when calculating jump path between systems
- Fixed crash when reviewing system visibility after ship exits hyperjump
- Fixed crash when drawing location badges
- Fixed rare crash when creating new colony
- Fixed crash when ship reviews its fleet escort
- Fixed crash when recording ship revert mission
- Fixed crash when checking for abandoned ships at location
- Fixed crash when fleet considers whether to retreat
- Fixed crash when updating system summary data
- Fixed rare crash when loading ship designs
- Fixed crash when calculating construction yard wait times
- Fixed crash when calculating stock levels
- Fixed crash when removing list items
- Fixed crash when merging temporary locations
- Fixed crash when resolving character location description
- Fixed crash when generating message log user interface
- Fixed crash when ship evaluates nearby threats
- Fixed rare crash when showing research screen
- Fixed rare crash while ship is determining system jump path
- Fixed a number of multi-threading-related crashes
- Fixed rare crash when processing ship movement and energy consumption

- Fixed crash when ship identifies nearby threats
- Improved context-locking for rendering to further reduce DXGI\_ERROR\_DEVICE\_REMOVED errors
- Enabled capture of DirectX Debug information when switched on
- Improved error reporting with more detail
- Fixed rare crash when a ship refuels

### **UI IMPROVEMENTS**

- Added text formatting to various messages
- Fixed some minor display issues with text layout
- Added further tooltips to Design List screen explaining Retrofit and Status columns
- Ensure that accepting a request to help another empire battle the Hive threat also ends any war between you
- Fixed sorting in Defensive Bases list for Name and Distance From Spaceport
- Added more detailed inline text formatting for markup language
- Extended text formatting to messages
- Updated Design List screen to more clearly indicate toggling for some items (underlines for Role Design, Auto Retrofit, Is Active columns)
- Added extra filter in New Mining Locations list: 'All Resources - No Asteroids'
- Improved selection of fleets and other items at galaxy level
- Added popup selection when click multiple items at same point
- Selection popup list is ordered by type, with fleets, stars and spaceports first
- Ensure player empire territory marked green (friendly) in Diplomacy map overlay
- Now include Autosaves for Continue Game button, i.e. if an autosave is the most recent savegame then that game will be resumed
- Better selection of default user interface size based on screen resolution (i.e. larger default size for larger screens)
- Fixed bug where ships sometimes could not be selected at system level
- Fixed Mining Locations list sometimes showing wrong items when filtering by a specific resource
- Properly filter out unknown resources in Colonies list
- Adjusted some galaxy map overlays so that properly fade out as zoom in (long range scanners, diplomacy, exploration)
- Adjusted general opacity for some map overlays (long range scanners, diplomacy, exploration)
- Added Continue Game button to main menu (load most recent savegame)

### **FLEET, SHIP AND STARFIGHTER BEHAVIOR**

- Fixed ships sometimes incorrectly reassigning mission when get too close to planets
- Reduced collision avoidance contention when ships are docking at base, thus improving throughput
- Further extended logic for ships to avoid exiting hyperjump when mission changes: will now remain in hyperjump when change - mission to move to coordinates (at same location), even though do not have specific target
- Fixed fleet ships sometimes getting stuck in deep space unable to jump
- Fixed damaged fleet ships that cannot jump to repair location causing repeated fleet repair missions
- Improved fleet target selection so that do not upgrade attack against enemy ship to attack against entire fleet unless lead ship of enemy fleet is visible, thus better assessing whether need to refuel or gather before attack
- Now ensure ships always get properly refueled by fuel tanker, even when very close to planet
- Fighters now better at continuing to escort carriers when supporting ongoing Raid, Capture or Bombard missions (fighters no longer stop idle in space)
- Fixed bug where fleets were sometimes calculating fuel range incorrectly and thus taking on missions that were too distant
- Fighters now never allow collision avoidance to prevent them from boarding their carrier, thus avoiding holding up the carrier's jump, etc.
- Ships now remain in hyperjump when assign new mission if target is at same location as previous

mission, e.g. thus have all fleet ships continue their jump to threat investigation location after first ship exits jump and upgrades mission to attack threat (no need to exit jump and then restart new jump)

- Added new ship mission type: Explore Location - explores all items at a location, useful for manually exploring asteroid fields. Select exploration ship and right-click on an item for popup menu with this mission
- Fleets no longer incorrectly refuel when assign prepare and attack mission against target outside a star system
- Default designs for medium and large freighters now have more fuel tanks to give greater range than small freighters
- Fixed bug where some ship/base retrofits were not completing properly, i.e. some new components were not being added
- Improved willingness of construction ships without hyperdrives to build new bases at own location
- Carriers no longer launch fighters when exit jumps at transit locations on way to final attack target, thus speeding up transit jumps (only launch fighters when real threats or arrive at final attack target location)
- Creating new fleet from multiple selected ships now also properly updates action buttons under Selection Panel to match new fleet

#### **TROOPS AND TROOP TRANSPORTS**

- Fixed some non-playable race troop sizes (were zero, thus very fast recruitment, etc).
- Ensure troop recruitment costs always paid, even when manually recruited
- Troops named with proper numeric prefix that relates to number of troop units in empire
- Infantry defense strengths increased
- Fixed automated non-fleet troop transports sometimes getting into endless loop of load/unload troops at a colony
- Troops at colonies now more likely to be ungarrisoned when not needed to meet defensive requirements or rebellion suppression (e.g. shortly after conquest), thus freeing them up for reloading on troop transports
- More careful auto-loading and unloading of troops for automated troop transports that are not part of a fleet. Avoid getting in endless loop of loading/unloading troops

#### **DIPLOMACY**

- Empires now properly decide whether to honor Defense Treaties, will consider whether to declare war on aggressors against their allies. Declining to honor treaty negatively impacts relations and reputation, whereas honoring the treaty (declaring war on aggressor) improves relations and reputation. When war diplomacy is not automated, player will be prompted with modal message window where they must choose whether to honor treaty or not
- Value of offer to end war with 3rd party in diplomacy trade deal screen now valued much lower. Other empire also has to be interested in an end to your war with 3rd party, i.e. they are friends with 3rd party and concerned about the war
- Non-Aggression treaties no longer offered when diplomatic strategy for a faction is set to Conquer
- Altered acceptance levels for diplomatic trade deals with other empires: angry empires require much higher value offered, friendly empires no longer offer very favourable deals
- Increased negative diplomatic incident amount from invading colonies, whether the colony is independent or owned by another faction. Negative incident amount now also scales with colony size, i.e. larger colonies generate stronger incident. However, when at war with faction then incident is much lower, as is negative reputation impact
- Increased negative diplomatic incident amount from colony bombardment. Note that this is not just a constant value, but rather is tied to actual amount of population loss
- Fixed bug where special locations could be traded repeatedly in Diplomacy trade screen
- Fixed bug where could not refuel ships at pirate bases when have Military Refueling agreement
- Ending a War or signing a Non-Aggression treaty now clears any dangerous locations for other empire, thus preventing automated fleets from unnecessarily investigating locations that are no longer a threat

#### **SHIP DESIGN**

- Ensure Upgrade Design button properly accounts for components that have matching category

but not the necessary capabilities, e.g. Star Marine Barracks that are crew quarters category but are used differently

#### **COLONIZATION AND SUITABILITY**

- Ensure some story planets have proper quality levels to eventually become colonized by specified race
- Fixed automated colonization sometimes colonizing targets slightly below suitability threshold in empire policy
- Improved loading colonists for new colony targets so that load most suitable race even when is not dominant race at load colony
- Tweaked independent colony suitability for some races so that always have suitability of at least +20 (economically viable)
- Colony ships now less likely to retrofit and more likely to colonize any targets within range before refueling (i.e. do not refuel if already have colonization target within range)
- Improved willingness of automated Colony Ships to colonize queued colonization targets that are independent colonies but are unsuitable for empire races (does not matter because bulk of population is pre-existing well-suited native race)
- Fixed bug where too many colony ships were sometimes being built
- Fixed bug where colony ships could sometimes load the wrong race of colonists for queued colonization targets
- When Colonization Automation is manual, automated colony ships no longer load colonists except for queued colonization targets

#### **CHARACTERS**

- Better handling of imprisoned characters when reconquer colony (ensure properly removed from prisoners of previous empire)
- Properly exclude imprisoned characters when determining defensive bonuses at colony (as shown in Troop Report screen)
- Added extra tooltip descriptions for character traits Corrupt (Scientist) and Double Agent

#### **MANUAL PLAY IMPROVEMENTS**

- Added action buttons for multi-selected ships: scrap and retire selected ships
- Added new right-click mission for multi-selected ships: capture (when ships have capability)

#### **AI IMPROVEMENTS**

- Now properly handle situation when empire was planning to build expensive planetary facility at a colony, but lost colony while saving up construction funds

#### **GENERAL BUG FIXES**

- Now properly exclude ShipHulls\_Art.xml file when not in art mode
- Fixed occasional error messages relating to regional settings on non-English PCs
- Fixed incorrect URL for .Net 6.0 installation

#### **SOUND EFFECTS**

- Limit number of simultaneous sound effects of same type to avoid very high effect volume, especially when first zooming into a location
- Further reduced simultaneous sound effects that can sometimes create loud bursts of sound
- Added Assault Pod sound effect
- Added shield strike and construction sound effects
- Fixed weapon firing sound effects not playing unless weapon also had accompanying particle effect

#### **MODDING IMPROVEMENTS**

- Added new Game Event features for story team
- Now allow loading multiple XML data files per type to better support modding
- Enabled IsPlayable flag in Races.xml file to better support modding. Note that races list in Start New Game screen does not scroll horizontally, so can currently only add 3-4 more races before disappear off right side of screen, but will add scroll support in future
- Added better support for custom mod-loading through command-line arguments
- Added extra checks with multi-file loading for mods, giving better feedback on data errors
- Implemented better approach for resetting static base data (loaded from XML files) when start a



new game in same session (no longer reload from files), thus better supporting modding

#### **OTHER**

- Remove HighDPI aware registry flag for current user (no need for this as DW2 now handles this itself)
- Ensure correct infantry image always used in research screen for troop research projects
- Fixed scuttle button sometimes not working for single ships or bases
- Fixed story events sometimes being generated in the wrong location (e.g. ancient debris fields at homeworld)
- Fixed minor text formatting issues
- Ensure creatures move away from stars if too close
- Improved error reporting
- Improved profiling to enable frame capture using RenderDoc
- Improved error reporting in some situations
- Properly clear room background when speak with independent colony for non-playable race
- Capped maximum number of user-defined starting empires in Start New Game screen to 20
- Fixed a typo regarding the Technocracy government
- Military Academy facilities are now 1 per Empire as originally intended
- Refresh 'Continue Game' button tooltip with latest savegame when exit to main menu
- Properly refresh empire territory path lines after load game
- Fixed shift key sometimes not working when editing text
- Reduced volume for construction sound effects
- Fixed empires using independent flags
- Fixed reputation increase from destroying pirate ships and bases
- Fixed minor typo in game start text when have single additional colony
- Corrected Kiadian typo in diplomatic research projects
- Ensured proper game icon is shown in taskbar
- Added extra error reporting for some rendering-related crashes

#### **v1.0.4.9 – 23<sup>rd</sup> June 2022**

##### **FLEETS, SHIPS AND FIGHTERS**

- Fixed bug that was sometimes blocking some fleet missions when Military Attack automation was manually controlled
- Prevent fleet ships from escorting their Core ships while they are still exiting construction/repair hangar
- 'Join ships to fleet' button now properly filters out any non-military selected ships when adding them to the fleet
- Fixed fighters sometimes using wrong weapons attack range (too low)
- Ensure fighters retain capture mission, assisting carriers to lower shields and capture target

##### **CHARACTERS AND INTELLIGENCE MISSIONS**

- Ensure character bonuses at location (colony, ship, fleet, base) only apply to characters from own empire (e.g. not foreign ambassadors)
- Altered intelligence mission difficulty thresholds so that spies more willing to attempt riskier missions. See updated tooltip for Mission Difficulty Caution in Intelligence Missions section of Empire Policy screen for new levels
- Ensure specified percentage of spies properly used for counter-intelligence (Counter Intelligence Ratio in Empire Policy)

##### **SPACE CREATURES**

- Ensure creatures do not get too far from horizontal plane (vertical offset)
- Ensure creatures do not get too close to stars, thus being difficult to attack

#### **OTHER**

- Research summary in header now shows when a project is being crash researched
- Extended research hover summary in header to also show queued research projects
- Fixed minor text display bugs in some game events
- Fixed Prime Research Station story event sending repeated messages when Suppress Messages

turned on in game settings

### **v1.0.4.8 – 31<sup>st</sup> May 2022**

This update includes many improvements in fleet coordination and fleet and ship behavior. Some of the issues addressed were due to bugs in the game, but others were due to confusion caused by unclear labeling or explanation on our part, which the below documentation and changes should resolve. Please read through the explanations below as well as the change list to fully understand how fleet and ship tactical settings are meant to function.

#### **Fleet Engagement Range vs. Engagement Range**

There is now Fleet Engagement Range (re-named) at the fleet level and Engagement Range at the ship level.

When a ship is in a fleet, the Fleet Engagement Range will override the ship's Engagement Range. The ship will only use its own Engagement Range when it is not in a Fleet.

The Fleet Engagement Range determines at a strategic level what missions/targets the fleet is in range of taking on. Previously, there was a gap at the system level where fleet and ship engagement ranges could conflict or override each other, which would result in the most restrictive of the two being used. That has been resolved. Now, if there is a target in the system and there is a fleet in the system with Fleet Engagement Range that would allow attacking within that system, the fleet will go attack that target as a fleet even if the individual ship settings would not allow individual ships to respond.

#### **Manual Fleets and Military Attack Policies**

It's important to note that a Manual fleet will not automatically respond outside of its own system. DW2 assumes that a Manual fleet is fully under manual orders for anything out of system. If you would like a fleet to automatically respond outside of its own system, it needs to be set to one of the Automatic fleet roles (for example, Attack or Defend) and its Fleet Engagement Range must allow it.

Also, if you have your Military Attacks Policy in the Military section of your policies set to Manual, then no fleets of any kind will respond or attack outside their own systems without being manually ordered to do so.

In order to have fleets fully responding outside their systems, you need to have:

1. Fleet Engagement Ranges set to allow it
2. Each Fleet needs to be set to one of the Automatic roles
3. The Military Attacks policy cannot be set to Manual

By default, all these things are true, but if you have changed these settings please be aware of their intended interactions and results.

#### **Fleet Attack Stance**

This was no longer performing any necessary function given the other settings and their capabilities. It was however adding confusion for players, so it was removed.

#### **Fleet Retreat Strategy**

There was an issue preventing this working as intended, which should now be resolved. It should also be noted that this has a different function than the Retreat When setting at the ship level. It was therefore renamed to Fleet Retreat Strategy to avoid confusion.

Fleet Retreat Strategy affects when the entire fleet will consider changing orders to escape a location based on overall strength comparison at that location. Individual ships will still follow their Retreat When setting in terms of responding to damage caused to that ship.

Note that Manual fleets will not at this time retreat as a fleet unless ordered to do so by the player. This is working as intended, as we generally lean towards manual meaning that the player has full control and gets to decide when the fleet retreats. All automated fleets will respect the Fleet Retreat Strategy.

#### **Position within Fleet**

We realized that the previous UI terminology used "Role" in two different instances. Role now refers only

to the general type of ship (i.e. Frigate, Destroyer, Cruiser).

The position of a ship in a fleet within the fleet formation is now more intuitively called "Position within Fleet" in the ship's tactical settings. The previous "Attack" has been renamed to "Core" to make it more clear that this position is in the center of the fleet, whereas "Close Escort" is the inner ring and "Picket" is the outer ring of the formation. In most cases, we recommend placing your point defense-oriented ships in the Picket or Close Escort positions and keeping your most valuable Capital ships and long-range standoff ships in the Core.

### **Ship Tactical Setting Apply Buttons**

We recognized that the importance of the tactical settings at the ship level was not matched by the UI in terms of the ease of adjusting them post-construction. There are now three new buttons available for any ship in a fleet:

- Apply these tactical settings to all ships of this design in the fleet
- Apply these tactical settings to all ships of this role in the fleet
- Apply these tactical settings to all ships of this position in the fleet
- Apply these tactical settings to all ships in the fleet

This only affects the ship level tactical setting. You can see these by selecting a ship that is in a fleet and looking at its tactical settings.

We also plan to add the ability to mass apply tactical setting changes whenever multiple ships are selected through any method in the future.

### **PERFORMANCE IMPROVEMENTS**

- Improved general performance, especially in very large late-game galaxies
- Fixed rare bug that was sometimes slowing general game performance
- Improved performance when calculating construction yard wait times, especially for large games

### **FLEET AND SHIP BEHAVIOR**

- Fixed Prepare and Attack fleet missions to properly evaluate need to refuel
- Fleets now more permissive when evaluating Prepare and Attack missions. If sufficient fleet ships in target system and can handle attack against target then less inclined to first refuel or gather. In other words, now more likely to attack targets in same system directly without first refuelling or gathering, even when some fleet ships are dispersed or need refuelling
- Fleets now wait for all fighters to board carriers before hyperjumping
- When preparing to hyperjump, carriers now move more slowly while waiting for all fighters to board, thus making it easier for fighters to catch up with carrier
- Fighters boarding carriers now move at maximum speed when returning to carrier from far away
- Fixed fighters sometimes incorrectly boarding carriers and then immediately relaunching
- Fleets now more careful to have enough available ships when auto-assigning attacks against targets
- Fleets more careful about completing attack missions (e.g. raid) when all fleet ships have completed the mission type
- Ensure disable action buttons when select fleet of another empire
- Fixed some additional situations where fleets would not engage threats properly
- Broadened Guard mission so that fleets/ships will engage threats at same location, even when threat is not currently attacking guard target
- Fixed bug where fleet engagement range was sometimes not properly overriding ship engagement range
- Ensure fleets properly use fleet engagement range when evaluating whether to attack targets (i.e. do not downgrade to use each ship's engagement range)
- Manually assigning refuel/repair/retrofit missions to automated fleets no longer immediately changes their role to Manual. All other mission types remain the same and will automatically change their role to Manual if currently automated (Attack, Defend, Raid, Invade)
- Fixed bug where fleets would sometimes not engage threats, even when within engagement range
- Ensure that automated fleets do not get caught in attack/retreat loop

- Fixed manually assigning Guard missions to fleets sometimes not being assigned to individual fleet ships
- When investigating dangerous locations fleets are now more careful to ensure have adequate strength to handle expected threats
- Ship missions that require docking at a colony (e.g. load/unload troops, load/unload colonists, etc) now more flexible about ship position, does not necessarily need to move to new position if already close to planet. This change helps these mission types complete faster
- Troops reserved for pickup by troop transport now immediately unreserved when transport destroyed (previously took a few seconds)

#### **FLEET AND SHIP TACTICAL SETTINGS**

- Removed unused Fleet Stance tactical setting
- In Tactical Settings dialog, the orange warning highlight for Fleet Engagement Range when the Military Attack policy is manually-controlled (thus disabling auto fleet engagement) is now used even when selected fleet is automated
- Updated Galactopedia topic for Tactical Settings to reflect updated ship and fleet tactical terminology and functionality
- Added comprehensive tooltips explaining each item in the Tactical Settings screen
- Ensure Tactical Settings dialog closes when select ship or fleet of another empire
- Clarified wording of explanations for Fleet Engagement Range in Galactopedia and Tactical Dialog tooltips (manual fleets auto-engaging within current system)
- Added tooltip to explain that Fleet Retreat tactical setting is not used by manually-controlled fleets
- Added tooltip to Fleet Engagement Range to explain when this is used by fleets
- Changed labeling for some fleet tactical settings for extra clarity
- Ensure Tactical Settings dialog not displayed when open Ship Design screen
- To reduce confusion role in ship tactical settings has been replaced with position within fleet
- Added extra 'Apply Settings' buttons to Tactical Settings dialog when displaying tactics for ship that is part of a fleet: allow applying settings to all fleet ships with same role, design, position in fleet.

#### **FUEL TANKERS**

- Automated Fuel Tankers in a fleet are no longer set to manual control when you set their fleet to Manual or when manually assign a fleet mission. This allows Fuel Tankers to remain automated and auto-delivering fuel to the fleet ships while the rest of the fleet is under manual control. Note that you can still set fleet Fuel Tankers to manual control when individually selecting them
- Ensure properly exclude fuel tankers when generating action button for fleet retrofit (fleet fuel tankers operate independently and retrofit on their own schedule)
- Automated Fuel Tankers now retrofit and repair as needed even when assigned to a fleet
- Additional tweaks to Fuel Tanker evaluation of when to refuel various ship roles, e.g. exploration ships now not refueled until lower fuel level, thus spending less time waiting for fuel tankers
- Fuel Tankers now periodically check whether target ship still needs refueling, cancelling mission if needed
- Fuel Tankers no longer refuel other Fuel Tankers unless they are completely out of fuel (including no fuel in cargo)
- Fuel Tankers more careful to avoid locations that have damaging storm effects that they cannot handle
- Fuel Tankers now more careful to avoid attempting to refuel ships that will soon enter hyperspace, instead prefer idle ships or ships that have already reached mission destination
- Fuel Tankers now more careful to avoid traveling to hostile locations when attempting to join up with fleet. Will instead move to nearby location free of threats
- Ensure Fuel Tankers can refuel ships even when in deep space far from any normal location

#### **COLONIZATION, MIGRATION AND TOURISM**

- Improved selection of queued colonization targets by existing colony ships that already have population loaded. Will now also unload population if necessary so that can load more suitable population from existing colonies
- Added new mission type to unload passengers for colony ships with colonists onboard. Access by

- selecting colony ship and right-clicking on one of your empire's colonies for pop-up mission list
- Altered auto-assigned migration missions to prefer higher suitability destination colonies
- Now exclude Colony Ships as available to colonize new colony while loading colonists (assign mission button in New Colonies list)
- When colonization range limits are enforced (game startup settings) now use straight-line distance to evaluate whether potential colony is in range of existing colonies (instead of path time, which caused issues when potential colonies were in nebulae)
- Fixed bug where colony ships would sometimes load wrong race as colonists
- Further improved race selection for new colonies, even for independent colonies, i.e. attempt to use most suitable race
- Further improved automated selection of colonizing race for Colony Ships based on queued and non-queued colonization targets (i.e. attempt to select most suitable race for new colonies). This applies even when you have custom population policies at your colonies that would otherwise prioritize other races for pickup (e.g. Resettle)
- Now prevent unloading colonists at colonies that cannot accept them due to either blocking population policy (e.g. Do Not Accept) or colony already being at maximum population
- Disabled ships (cannot move) no longer count as threats and thus do not show up on threats list or block colonization or construction at the location
- Tourism missions now properly ignore colony population policy settings (tourism to destinations with policy of Do Not Accept, etc)
- Ensure tourism destinations are selected more evenly by passenger ships (resort bases + scenic colonies)

#### **ECONOMY, COLONIES, RESOURCES AND CONSTRUCTION**

- Colony corruption and support costs now scale similarly to colony revenue beyond 50% maximum population. This means that net colony revenue no longer decreases as population increases, though it will increase much more slowly.
- Reduced luxury resource consumption rate at colonies by 33% to improve resource logistics across a variety of galaxy map settings and resource prevalences
- Reduced default stock level for fuel storage at mining stations
- Ensured spaceports not at colonies have more storage space and higher stock levels for fuel and construction resources
- Freighters transporting resources to locations now allow some over-delivery of amounts beyond cargo capacity for each resource. This especially improves efficiency for locations that are space-constrained and thus have stock levels the same as the cargo capacity (e.g. mining stations, research stations)
- Ensure resource ordering for colonies and bases requests excess amount above stock levels to reduce frequency of reordering and thus reduce freighter demand
- Fixed bug where destinations were sometimes failing to receive resources via freighter
- Added warnings to New Colonies list and Selection Panel indicating when a planet has low suitability for colonization and the economic consequences
- New resources are now properly discovered and used when you acquire a ship or base with the previously unknown resource in its cargo (e.g. abandoned base, story event, etc)
- Fixed bases built at independent colonies (e.g. research stations) incorrectly using cargo, stock levels and cargo capacities of parent colony (should only do so when parent colony is own empire)
- Ensured Resources and Stock Levels dialog does not incorrectly indicate that some resource amounts on hand are below the stock level
- Resources and Stock Levels dialog now includes explanatory note about foreign sources in tooltip for Mined and Known Locations
- Colonies now always attempt to stock super luxury resources when available (Korabian Spice, Loros Fruit, Zentabia Fluid), even when they can meet their target development level through other, more accessible luxury resources
- Ensure automated construction does not build too many ships at once (minimize big swings in cash on hand, etc)

#### **EMPIRE BONUSES**

- All maintenance savings bonuses now applied by dividing by (1 + bonus amount) instead of multiplying by bonus amount (ship maintenance, troop maintenance, planetary facility maintenance). This means that maintenance savings can never be greater than full maintenance costs (no negative maintenance)
- Fixed some bonus types being applied incorrectly (TroopRecoveryRate, ShipEnergyUsage)
- Ensure that empire-wide bonuses from research are properly integrated into overall empire bonuses (e.g. Troop Maintenance Savings from Improved Logistics project, etc)

#### **CHARACTER SKILLS AND DIMINISHING RETURNS**

- Character skills at a location are now applied with diminishing values. Thus the best character for a skill applies 100% of their skill level, but all subsequent characters only apply a steadily diminishing proportion of their skill for that area (thus 100%, 50%, 25%, etc). This means that it is often better to spread characters across multiple locations instead of concentrating them at a single location, e.g. admirals and generals in multiple fleets, scientists in multiple research stations, etc.
- Updated Galactopedia topic Characters to explain diminishing character skills for a location
- Slowed growth of character skill levels

#### **INTELLIGENCE MISSIONS**

- Decreased success chance for intelligence missions. Diminishing value begins at 75% instead of previous 90%. Thus spies must have much higher skill levels to reach high success chance

#### **SHIP DESIGN IMPROVEMENTS**

- Tweaked default design templates for colony ships and troop transports to maximize chance of sufficient reactor energy output to power hyperdrives at full speed and thus extend travel range
- Further improved auto-design for troop transports to maximize fuel range by ensuring hyperdrives have full reactor energy supply
- Fixed faulty weapon damage graph for tractor beams in Ship Design screen

#### **EXPLORATION**

- Fixed exploration ships sometimes pausing exploration of home system when have not yet found fuel source
- Fixed black hole vortex range so that exploration ships can properly complete mission

#### **OTHER CHANGES**

- Suppress incorrect initial mouse-up when enter research screen from main view header (would sometimes incorrectly queue the hovered research project)
- Fixed text display bug for colony events reported as Galaxy News (Patriotic Wave, Predictive History, etc)
- Limit maximum number of items displayed in Summary View (bottom-middle of screen) at galaxy level (colonies, spaceports, fleets) to ensure that on lower resolution displays this does not become overwhelming in the late game
- Altered Ghost Fleet Base story event to always be generated at location with fuel source
- Ensure raid countdown processed for bases

#### **ART BUNDLE CHANGES**

- Fixed various issues in the art bundles with incorrect texture sizes as well as uncompressed or unstreamed texture settings
- Substantially reduced texture memory usage for creatures, nebulae and effects

#### **v1.0.3.7 – 22<sup>nd</sup> April 2022**

- Improved general performance, especially in very large games
- Reduced likelihood of hangs before autosaving
- Added fix for rare memory corruption when animating space creatures
- Further adjustments to some map overlays to improve performance (long range scanners, exploration, diplomacy)

#### **v1.0.3.6 – 19<sup>th</sup> April 2022**

##### **CRASH FIXES**

- Fixed crash when adding diplomatic incident
- Fixed crash when updating ship engine exhaust

- Fixed crash when calculating ship collision avoidance
- Fixed crash when resolving character mission location description
- Fixed crash when drawing troop summary
- Fixed crash when determining resource prices
- Fixed crash when determining fleet systems within engagement range
- Fixed crash when evaluating threats to ship or base
- Fixed crash when fixing ships in a location
- Fixed crash when updating location for fighters onboard a carrier
- Fixed crash when rendering message
- Fixed crash when firing weapons
- Fixed crash when rendering character traits
- Fixed crash when determining retrofit resources for a ship or base
- Fixed crash when finding nearest refuelling point
- Fixed crash when drawing empire relation in diplomacy screen
- Fixed crash when determining empire mining targets
- Fixed rare crash when loading some older savegames
- Fixed crash when switching camera modes

#### **SYSTEM BADGES AND MAP OVERLAYS**

- Fixed clickable regions for new basic system badges
- Ensure map buttons retain highlight state when apply changes to graphics settings
- Altered map overlay buffer format (long range scanners, exploration, diplomacy) to improve overlay opacity and visibility

#### **SAVEGAMES**

- Updated autosave timer logic to ensure save at specified intervals. Reminder that paused time does not count towards autosave interval
- Now check for low disk space when saving game and send warning message if needed
- More graceful handling of savegame failures for whatever reason

#### **OTHER**

- Fixed slow initial zoom-in when start new game
- Now purge old low-priority empire messages
- Altered texture streaming memory budget to be more generous when no shared system memory allocated
- Waypointing ships now properly slow to a stop while waiting for other fleet ships to arrive
- Fixed bug when performing jump pathfinding
- Fixed colony bombardment ship range when colony has long range defensive weapons (previously ships were too cautious to approach colony when tactics were Evade)
- Updated values for planetary shield facilities
- Data fixes to allow planetary destroyer to be built again

### **v1.0.3.5 – 14<sup>th</sup> April 2022**

#### **CRASH FIXES**

- Reworked some rendering to further minimize DXGI\_ERROR\_DEVICE\_REMOVED crashes
- Fixed crash when evaluating threats
- Fixed crash when calculating location visibility level
- Fixed crash when rendering research screen
- Fixed crash when examining recent trade deals
- Fixed crash when extracting resources
- Fixed crash when identifying independent repair bases
- Fixed crash when fulfilling resource orders
- Fixed crash when sorting items while determining mining targets
- Fixed crash when executing action
- Fixed crash when calculating construction yard wait time
- Fixed crash when identifying refuelling points

- Fixed crash when rendering ship or base summary
- Fixed crash when drawing construction yard summary
- Fixed crash when updating ship engine exhaust
- Fixed crash when preparing ship for retrofit
- Fixed crash when changing ship empire
- Fixed crash when obtaining fleet template designs per role
- Fixed crash when auto-assigning scout mission to exploration ship
- Fixed crash when launching assault pod
- Fixed crash when updating user interface controls
- Fixed crash when refreshing graphics setup
- Fixed crash when checking whether ship is in battle
- Fixed crash when checking for appearance of hive threat
- Fixed crash when completing ship command
- Fixed crash when planet removed in game editor
- Fixed crash when calculating ship collision avoidance
- Fixed crash when drawing system exploration data
- Fixed crash when drawing system summary
- Fixed crash when editing bonuses in game editor
- Fixed crash when drawing research button
- Fixed crash when updating tourism/migration/resource flow data
- Fixed crash when adding diplomatic relation incident
- Fixed crash when rendering creature effects
- Fixed crash when rendering map overlay buttons
- Fixed crash when reviewing army templates
- Fixed crash when updating character bonuses
- Fixed crash when processing ships and bases
- Fixed crash when inflicting ion damage from nebula storms
- Fixed crash when removing weapon blast from location
- Fixed crash when ship unloads passengers
- Fixed crash when generating new character

#### **PERFORMANCE IMPROVEMENTS**

- Added new default system badge mode (Basic) with smaller, simplified badges when zoomed out to galaxy level. Extended mode is same as previous Basic mode

#### **OTHER CHANGES**

- Fixed Load Fleet Template dialog to properly load from FleetTemplates sub-folder (same folder as Save Fleet Template)
- Exploration and diplomacy map overlays now auto-enable when in relevant UI area
- Long range scanner, exploration and diplomacy map overlays now more opaque
- The resource and credit discount on Planet Destroyer hulls has come to an end
- Ship hull fixes for certain freighters and transports
- Fixes to component data typos and some tweaks some of which affect the permissible slot sizes for certain late game weapons
- Additional story event fixes
- Fixes for some facility upgrade issues due to incorrect IDs in the facility data

### **v1.0.3.4 – 8<sup>th</sup> April 2022**

#### **CRASH FIXES**

- fixed crash when building facility
- updated Harmony library to resolve some problems

#### **PERFORMANCE IMPROVEMENTS**

- improved general performance relating to fleet operations
- fixed occasional hang when fleets bombard colonies
- fixed occasional performance 'stuttering'



- fixed ship movement sometimes being jerky when zoom into same location
- improved rendering performance for map overlays: exploration, diplomacy long range scanners

### v1.0.3.3 – 6<sup>th</sup> April 2022

#### **CRASH FIXES**

- fixed bug where economy line items were often not being updated (introduced in 1.0.3.1)
- added fixes to greatly reduce number of DXGI\_ERROR\_DEVICE\_REMOVED crashes
- fixed crash when fleet evaluates whether to invade colony
- fixed crash when ship fires intercept weapons
- fixed crash when determine empire migration sources
- fixed crash when getting native creature habitats
- fixed crash when updating user interface controls
- fixed crash when updating ship engine exhaust
- fixed crash with sorting when finding nearest refuelling point
- fixed crash when drawing empire relation
- fixed rare crash when drawing troops and characters
- now handle access denied error when saving game settings or game start settings files

#### **PERFORMANCE IMPROVEMENTS**

- slightly improved general performance

#### **ADDITIONAL CHANGES**

- added Harmony modding support to DW2

### v1.0.3.1 – 4<sup>th</sup> April 2022

#### **CRASH FIXES**

- fixed crash when ship performs collision avoidance
- fixed crash when ship determines large items to avoid
- fixed crash when completing spy mission
- fixed crash when finding nearest refueling point
- fixed rare crash during rendering
- fixed rare crash when generating tool tips
- fixed rare crash when investigating abandoned ships or bases
- fixed crash when drawing animated characters
- fixed crash when creature moves to new location
- fixed crash when evaluating threats
- fixed crash when rendering system badges
- fixed crash when ship destroyed
- fixed crash when assigning ship mission
- fixed crash when rendering ship and base symbols
- fixed crash when updating empire territory
- fixed crash when ship exits hyperjump
- fixed crash when rendering effects
- fixed crash when identifying refueling points
- fixed crash when reviewing fleet escort ships
- fixed crash when ship is refueling
- fixed crash when finding fastest construction yard
- fixed crash when determining blockaded locations
- fixed crash when artifact changes location
- fixed crash when notifying empire of attack
- fixed rare crash when add display effect
- fixed rare crash when rotating stars and planets
- fixed crash when moving weapon blast
- fixed crash when updating nebula storm clouds
- fixed crash when ship or base destroyed

- fixed crash when showing message
- fixed rare crash when ship fires weapons at attackers
- fixed crash when adding resource/tourism/migration flow data
- fixed rare crash when generating tool tips
- fixed crash when drawing nebula storm clouds
- fixed crash when ship or base destroyed
- fixed crash when directing fleet escorts
- fixed crash when updating nebula cloud rendering
- fixed crash when resolving trade offer description
- fixed crash when getting fleet jump speed
- fixed crash when processing ship
- fixed crash when processing location effects
- fixed crash when checking for active hyperdeny at a location
- fixed crash when generating task to queue construction of a base at a location

### **v1.0.3.0 – 1<sup>st</sup> April 2022**

#### **CRASH FIXES**

- Fixed rare crash when evaluating collision avoidance factors
- Fixed rare crash when assigning ship mission
- Fixed rare crash when determining whether to accept treaty
- Fixed rare crash when checking whether a fleet should retreat from a battle
- Fixed crash when obtaining ruins and wonders at a location
- Fixed crash when drawing research project summary
- Fixed rare crash when ship or base fires weapons at attackers
- Fixed rare crash when colony conquered by invasion
- Fixed rare crash when selecting random resource
- Fixed rare crash when determining diplomatic strategies with other empires

#### **PERFORMANCE IMPROVEMENTS**

- Improved rendering performance when in research screen

#### **OTHER CHANGES**

- Additional data fixes for certain small troop transport ship hulls and certain artifacts

### **v1.0.2.9 – 31<sup>st</sup> March 2022**

#### **CRASH FIXES**

- Changed how colony city night lights are handled to minimize video memory usage
- Improved game update cycle to eliminate possible threading issues during game saves
- Fixed crash when evaluating ship boarding status
- Fixed rare crash when ship or base fires weapons
- Fixed rare crash when finding nearest refuelling point
- Fixed rare crash when colony wiped out
- Now more careful with handling missing game settings files

#### **ADDITIONAL LOGGING**

- Added functionality to automatically send crash logs to dev team (prompts player to send in next game session)

#### **OTHER CHANGES**

- Now display message to indicate when auto-saving the game
- Fixed cluster galaxies sometimes generating star systems outside playable area
- Data fixes to certain ship hull data typos for troop transports and some stations
- Data fixes for various story event issues
- Research project tree fixes for various fallback and prerequisite paths, mainly to fix the armor tree
- Defensive bases can now be research one Tech Level earlier on the Research Tree

### **v1.0.2.8 – 28<sup>th</sup> March 2022**

#### **CRASH FIXES**

- Fixed savegame corruption when save while expired messages are being purged (note that some past saves were corrupted and if these do not load in 1.0.2.8 they are unrecoverable)
- Fixed hang on save due to fighters incorrectly taking their parent carriers 'Prepare and Attack' missions
- Fixed rare crash when iterating fleet ships
- Fixed rare crash when sending message to empire
- Fixed rare crash when iterating empire messages
- Fixed crash when clearing pursuers from target

#### **RENDERING FIXES**

- Changed how vertex buffers are handled to reduce video memory usage and reduce crashes
- Now more carefully check for missing buffers when rendering shield impact effects

#### **FLEETS AND SHIPS**

- Now take more care to ensure nearby ships are added to fleets, thus better preserving fleet cohesion
- Exclude ships with manually assigned attack missions when determine whether to break off attack against a target (target jumps outside engagement range or fuel range, etc)
- Fleets and ships now better at retaining attack missions against targets that jump to another location, especially when target remains in same system
- Fixed bug blocking direct attack fleet missions
- Shortened wait time before attacking when fleets regroup at a waypoint (Prepare and Attack), i.e. fleets commence attack phase faster once reach waypoint

#### **OTHER**

- Ensure freighters with short hyperdrive jump range are not selected for distant transport missions (should fix freighters with Skip Drives sometimes dumping cargo)

### **v1.0.2.6 – 25<sup>th</sup> March 2022**

#### **CRASH FIXES**

- Adjusted how some vertex buffers were created to improve stability (more to come on this)
- Fixed bug where shield impact model vertices were sometimes setup incorrectly
- Fixed rare crash when ship is turning
- Fixed rare crash when initiating particle effect
- Fixed rare crash when assigning ship mission

#### **PERFORMANCE IMPROVEMENTS**

- Increased multi-threading support for some game logic, improves performance, especially for large late-games

#### **FLEET AND SHIP COORDINATION IMPROVEMENTS**

- Added full Prepare and Attack missions for fleets (attack, raid, capture, bombard). This is the default right-click fleet attack mission type and will also be used by automated fleets. Fleets will now automatically refuel (when need fuel) or waypoint (if need to regroup) before undertaking their attack mission. If they do not need refuelling or regrouping then they will attack the target directly. When refuelling or regrouping the fleet will synchronize their final jump to the attack target.

### **v1.0.2.4 – 23<sup>rd</sup> March 2022**

#### **CRASH FIXES**

- Fixed game hang that was causing saves and loads to fail
- Fixed rare crash when applying nebula effects to ships
- Fixed rare crash while initiating particle effects

#### **PERFORMANCE IMPROVEMENTS**

- Altered asset streaming timeout to reduce video memory usage

#### **FLEET AND SHIP FIXES**

- Now exclude ships that cannot jump when determining fleet jump speed (previously was blocking some missions)
- Improved logic for fighters boarding their carriers when the carrier is preparing to jump. Normally

when carrier is jumping, they will wait for fighters to board, unless very distant. But when carrier is escaping then fighter boarding time is reduced and fighters may be left behind (destroyed)

- Improved performance of exploration ship mission selection when in late-game and most systems explored
- Fixed bug where ships were sometimes overcautious about travelling to locations with effects, e.g. black holes with ranged damage effects

#### **OTHER FIXES**

- Reenabled maximum research queue limit of 15 projects

#### **v1.0.2.3 – 22<sup>nd</sup> March 2022**

##### **CRASH FIXES**

- Added extra error-handling for DXGI\_ERROR\_DEVICE\_REMOVED errors when display adapter resets
- Added delay after applying changes to display settings or encountering DXGI\_ERROR\_DEVICE\_REMOVED adapter reset error
- Fixed profiling data not reenabling once disabled
- Ensure Steam API updated each frame

#### **v1.0.2.2 – 21<sup>st</sup> March 2022**

##### **CRASH FIXES**

- Fixed some further DXGI\_ERROR\_DEVICE\_REMOVED errors
- Fixed crash when calculating population defend strength at a colony
- Fixed crash in Abandoned Ship and Bases list when use sort 'Distance from Spaceport'
- Fixed rare hang when ship attack mission gets stuck

##### **RENDERING**

- **IMPORTANT CHANGE:** Changed default back buffer format to use Standard Range rendering. This may help some who are experiencing black screens at startup, \_but it will also reduce the quality of some visuals\_. If you were not previously having problems with black screens or crashes then you can revert to High Dynamic Range rendering in the in-game Game Settings to restore the visuals to their previous quality.
- Improved performance when long range scanner map overlay enabled

##### **TROOPS**

- Changed meaning of colony automation setting 'Automate Infantry Recruitment and Garrison' to now include all troop types, i.e. 'Automate Troop Recruitment and Garrison'
- Lowered attack troop recruitment levels, especially for large empires
- Added automation icons to Selection Panel to indicate colony automation status for troop recruitment and resource stock levels

##### **HIVE AND PLANET DESTROYER**

- Added diplomatic incident and reputation impact from using planet destroyer against colonies
- Improved movement of planet destroyer ship to better avoid clipping planet surfaces
- Capped maximum bonus levels for Hive ships when salvage debris or raid colonies and bases

##### **OTHER**

- Improved calculation of optimal attack range against targets based on weapon ranges (ship/base attacks and bombarding colonies)
- Reviewed policy setting for intelligence mission caution so that aligns with revised mission difficulties. Tooltip explains success chance per level
- Empire systems no longer start inside nebulae
- Fixed occasional faulty ETA display for transferring artifacts
- Fixed population policy window not scrolling with mouse wheel when colony detail panel also open
- Fixed blank or incorrect startup colony and base stock levels when colony stock level automation is manually controlled
- Additional data fixes for a few missing weapon sounds, certain missing component/hull resource costs, a few event fixes

### **v1.0.2.1 – 18<sup>th</sup> March 2022**

#### **CRASH FIXES**

- Fixed rare crash when rendering empire territory
- Fixed rare crash when scrapping advanced ship with tech bonus, but your empire has not yet researched a relevant project
- Fixed rare crash when calculating military ship strength
- Fixed rare crash when evaluating threats to a ship

#### **RENDERING CRASH HANDLING**

- More graceful recovery when texture or vertex buffer creation fails due to display adapter crash, reset, or change in performance mode. This should greatly reduce the number of DXGI\_ERROR\_DEVICE\_REMOVED crashes

#### **DIPLOMACY**

- Improved diplomacy so that relations now more likely to rise to higher levels (top-level treaties) when you work at improving relations with a faction. Remember that you can directly set diplomatic strategy per faction, which will also help improve relations (Befriend, Ally, Close Ally)

#### **FLEETS AND SHIPS**

- Fixed bug where ships and fleets could sometimes teleport to edge of galaxy when assigned a mission while already jumping
- Fleet jump speed coordination now applies to all fleet missions, not just attack missions (ships travel at same jump speed)
- Fuel Tankers no longer use fleet jump speed when part of a fleet

#### **OTHER**

- Now properly review maximum colony population level as tech improves (colonization modifiers) and planet quality changes (terraforming, etc). This fixes issues with migration missions sometimes not completing
- Ensure that player's per-role ship design automation settings are reset between each game (not remembered from previous games)
- Fleet Template screen no longer generates empty fleet when do not have enough money to build
- Ensure scroll position in Empire Policy screen is reset to top when open again (previously settings were sometimes not appearing until scrolled up)
- Reduced estimated resource demand for fuel so that more accurately aligns with actual usage
- changed default game start settings for research to fixed paths and colonization range limit to 300M
- Data fixes and changes to correct resource costs for some components/hulls with no resource costs or incorrect costs
- Added missing fallback paths for some armor techs
- Fixes for some story event issues
- Extended range for dedicated bombardment weapons
- Simplified main menu scene to assist with consistent startup crash troubleshooting

### **v1.0.2.0 – 15<sup>th</sup> March 2022**

#### **DISPLAY AND RENDERING**

- Reduced asset streaming memory budget to allow more memory for other rendering
- Fixed bugs when auto-detecting display mode with highest refresh rate
- Reenabled fixed timestep updates
- Added more logging to data/SessionLog.txt file: display adapter selection (including primary monitor detected), display modes, galaxy settings
- Added new setting to GameSettingsOverride.txt: GraphicsStreamingMemoryBudget allows specifying video memory in Mb allocated for asset streaming
- Added new setting to GameSettingsOverride.txt: DisableFixedTimeStep: when set to true allows disabling fixed time step (higher FPS, but also higher GPU temperatures and power usage)

#### **CRASH FIXES**

- Fixed crash when determining attack targets
- Fixed rare crash when sorting some lists in Control Center

- Fixed rare crash when opening Research screen
- Fixed rare crash when determining locations for new monitoring stations
- Fixed rare crash when changing map overlays

#### **INTELLIGENCE MISSIONS**

- Increased difficulty of some intelligence missions, especially steal tech when targeting higher level research projects
- Altered how intelligence mission success chance is calculated so that always a chance of failure (even without counter-intelligence)
- Slightly increased effectiveness of counter intelligence missions (more likely to intercept enemy spy missions)

#### **OTHER**

- Fixed bug where default keyboard settings were sometimes not being generated at game startup
- Fixed bug where ships would avoid bombarding a colony that had imprisoned characters
- Fixed bug where invading characters that were killed at a colony were sometimes not removed from the colony
- Avoid executing advisor messages twice when automation is set to Suggest and Execute, e.g. building planetary facilities
- Data fixes to various events, facilities, research projects, ship hulls and artifacts (only available with a new game)

### **v1.0.1.9 – 14<sup>th</sup> March 2022**

#### **DISPLAY AND RENDERING**

- Fixed faulty display resolution detection at game start
- Improved resolution of correct display adapter when specific adapter requested
- Disabled fixed timestep updates (higher FPS)
- Allow toggling on-screen FPS and other rendering data using shift-Tilde (top-left corner of most keyboards), which allows seeing which display adapter is being used

#### **CRASH AND HANG FIXES**

- Fixed crash when empire has revolution and changes government
- Fixed hang where fighters at colonies would lock up when their parent colony was wiped out
- Fixed hang where exploration ship attempts to explore a location that has nebula sensor disablement that exceeds its scan power

#### **EXPLORATION**

- Asteroids are now explored much quicker than planets, moons or stars (for both scan and survey)
- Ensure all necessary resources in prewarp home system are discoverable at initial tech levels, even when already present

#### **DIPLOMACY**

- Reduced envy factor in diplomacy when have positive diplomatic strategy for other faction ('We are envious of your huge strength and power')
- Envy factor in diplomacy now grows more gradually

#### **OTHER**

- More careful about evaluating systems inside nebulae and related logic
- Rebalanced loading of game processing for large games with many ships
- Fixed ships sometimes getting stuck salvaging debris when has bonuses but came from one of own empire's ships
- Construction ships now more careful to avoid building at distant locations (even in same system) when do not have hyperdrive
- No longer generate error sound and effect when move mouse off scrollbar while scrolling a panel or list

### **v1.0.1.8 – 13<sup>th</sup> March 2022**

- Improved handling when graphics device is reset
- Improved auto-detection of default screen refresh rate
- Ensure file save/load dialog is shown even when hide user interface

- Added new GameSettingsOverride.txt file to allow manually setting graphics adapter, resolution, windowed mode. This should be a handy way for players to set stuff directly. Comments in file explain everything. Changes as below:
- Extended new GameSetting Changes as below:
- Extended new GameSettingsOverride.txt file to allow forcing game to run in exclusive fullscreen mode (GraphicsForceDedicatedFullScreen)
- Added startup logging for game session (data/logs/SessionLog.txt)
- Reenabled Windows registry settings for requesting high performance GPU mode
- Improved calculation of content streaming memory budget on systems with multiple graphics adapters
- Improved memory management for rendering in various situations

#### **v1.0.1.6 – 11<sup>th</sup> March 2022**

- Fixed crash that sometimes happens when have many game controllers and other devices
- Fixed User Interface Size showing options that are invalid for the current screen resolution
- Improved handling of High DPI settings in Windows
- Added settings to ensure NVidia video cards run in high performance mode should fix a number of crashes and performance problems
- Fixed rare crash when moving characters via dropdown list in Character screen
- Fixed rare rendering crash
- Fixed rare crash when ship design could not be found when updating render data
- Improved performance at location level when many ships and lots of running lights
- Fixed bug in Start New Game screen where could select race-specific government types when select random race
- No longer prevent construction ships from carrying out base-building when waiting for response on advisor suggestions for repairing abandoned ships or bases
- Hooked up instability and unhappiness after a government change, leader loss, etc ('Have Revolution' button)
- Construction ships no longer feel tempted to repair fighters
- Fixed bug in some game events that was causing loss of a colony
- Fixed wrong tooltip text on buttons in Character Detail screen for captured prisoners
- Further fixes to crashes after lengthy play sessions
- Further improvements to performance by making sure GPU runs at maximum performance instead of sometimes using power-saving mode
- Further improvements to performance and crash issues by ensuring faster GPU is selected (when also have integrated video)

#### **v1.0.1.4 – 10<sup>th</sup> March 2022**

- Initial Release