

# Elite Dangerous Cougar Display (EDCD)

EDCD is an Open GL graphical enhancement application designed to render cockpit instrumentation and convey information from Elite Dangerous to two separate consoles. Elite's log files are analysed as game events are generated and used to generate high quality images reacting to events in real time.

These consoles are best used in conjunction with a pair of Thrustmaster MFD Cougar units which provide a panel of buttons to matchup to the action icons rendered by EDCD. By using a pair of 8-inch monitors behind the MFD Cougars, Elite's cockpit becomes extended and a better game experience can be enjoyed.

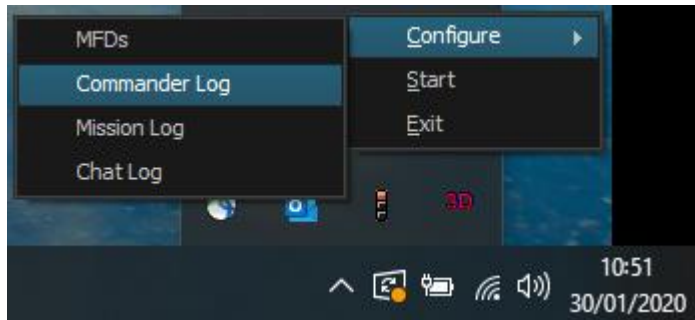


*On the left, a Thrustmaster MFD Cougar. On the right, EDCD running on an 8" monitor*

## EDCD Feature List

Almost zero configuration. A single click of the mouse is all that is needed to map the application to Elite key binds. From installation to running in less than a minute.

Runs minimised in the system tray. Simple click on the icon to bring up the menus to reconfigure settings, position windows, etc.

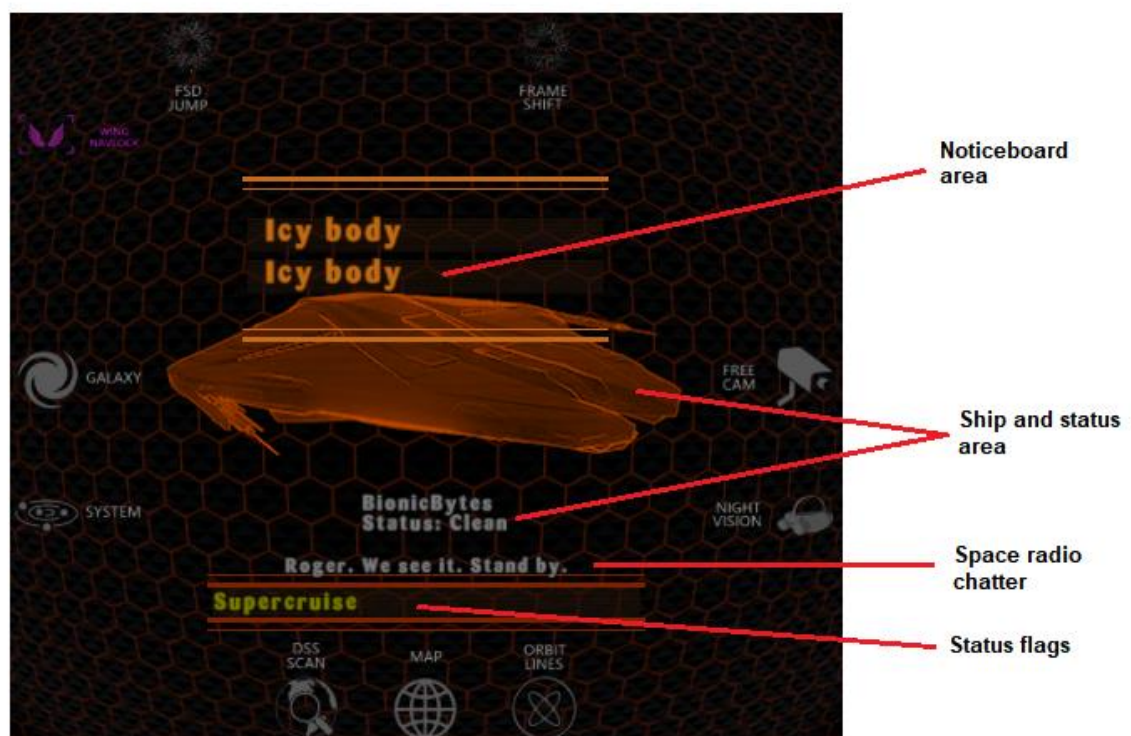


## Customisable Cockpit Displays

Cougar users can use the rocker switches to change aspects of the display dynamically.



Using the built-in editor, the colour scheme can be changed to suit preferences on each of the different displays (flight, super cruise, planetary landing, weapons, fleet carrier, SLF and SRV). Additionally, the icons can be rearranged and selected from the large set of available options.





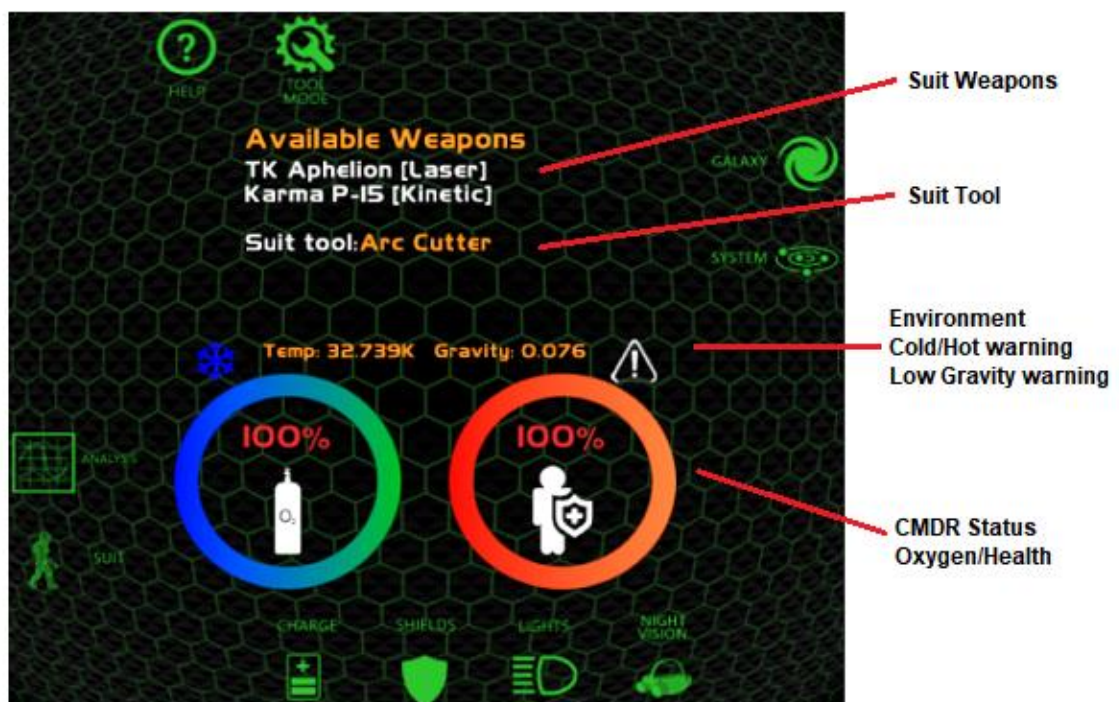


Target area  
(hull/shield  
CMDR name  
status  
human/npc)



FSD Jump ready status flags  
(All green) - Jump Available

Hardoints  
Langing Gear  
Cargo Hatch  
FSD Cooldown  
FSD Mass Lock



Using the built-in editor, the layouts and icons can be customised, down to the colour and sizes of the font.

**MFD Layout Editor**

Layout Set: **Flight** New Layout Revert  
 Name: **Flight** Role: **Flight** Undo changes

**Defaults** ☐ Enabled

Background Colour: **202070FF** RGBA colour Icon Text Gap: **0**  
 Icon Colour On: **F01010FF** RGBA colour Icon Size: **8**  
 Icon Colour Off: **801010FF** RGBA colour Notice Board Colour: **FE690AFF** RGBA colour **40** Font Size  
 Texture Scale: **14** Status Text Colour: **F0F0F0FF** RGBA colour **30** Font Size  
 Background Texture: **hexagons** Target Text Colour: **808080FF** RGBA colour **27** Font Size  
 Hazard Blend: 0 10 20 30 40 50 60 70 80 90 100 Screen Clear Colour: **00000000** RGBA colour

**Button Assignments** ☐ Disable buttons (remove from display)  
☒ Icon text colour uses Colour (Off)

**Assigned (current)**

MFD Button: **1**

Icon: **FSD Jump** Clear  
 Colour (off): RGBA colour Colour (on): RGBA colour  
 Hazard Layer: ☐  
 Show Label: ☒  
 Status Tracking: **FSD Charging**  
 Key press(es): **HyperSuperCombination=I,LeftShift,LeftAlt** Clear  
 The keys you select must be bound in Elite

**Available (for assignment)**

Select Icon

Elite Key Assignment (Bindings with keyboard device)  
Custom.4.0.binds Elite Binding File  
 Select your Elite Dangerous key binds file

Quick Key Assign A quick and easy way to map keys between ED and this app Close Save Layouts

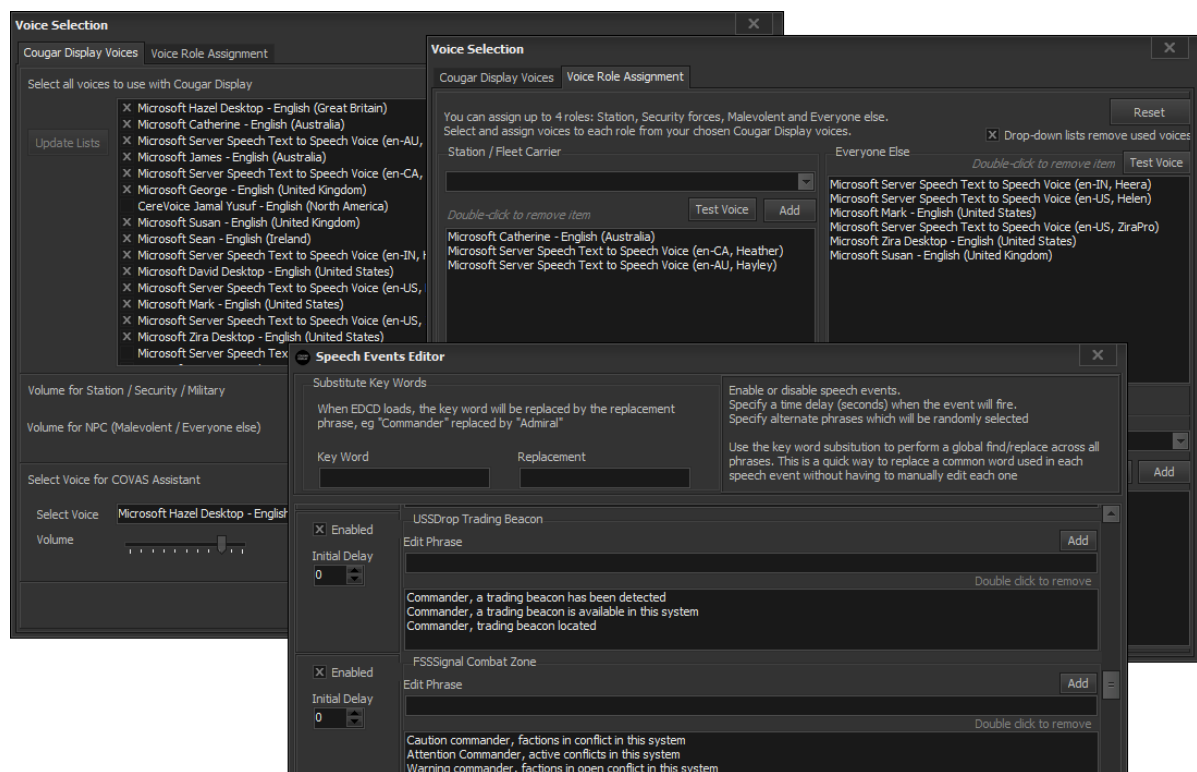
**Quick key Assign** option – Elite has hundreds of possible key bindings. With one click, Elite can be configured to recognise the Cougars and match the layouts specified in the editor. Either the already configured key binds will be used, or one will be set for use.

## Text to Speech Synthesis

Brings Elite Dangerous to life by making NPCs 'talk'. Multiple pirates, station controllers and system authority NPCs (up to 5 simultaneously) can be assigned different voices for automatic speech synthesis (assuming your Windows system has suitable voice packs available).

You have the ability to:

- Assign a unique synthetic voice as an assistant to your Elite COVAS voice.
- Assign a set synthetic voices to use used by station authority / Fleet Carriers
- Assign a set synthetic voices to use used by system authorities / police
- Assign a set synthetic voices to use used by malevolent NPCs
- Specify which game events fire a text to speech
- Specify what set phrases are used by the covas assistant
- Fine tune voice filter effects





### Simulated Air Traffic Control

A fully customisable script can be set to play in the background during supercruise and system space. Using a set of audio filters, synthesised voices are rendered along with ambient noises. Morse code beeps can be heard panning from speaker to speaker, and a full blown Apollo 11 Moon landing conversation is acted out to break up the silence of super cruise voyages.

An additional script is used in system space to provide ambient background radio chatter as ships come and go in the local system. The amount of chatter is customisable as is the conversations taking place. This script file can be edited into another language if desired.

The scripts can be edited and actors assigned to each line, along with randomising the voices (from the pool of voices assigned to roles) and lines spoken.

### POI / Navigation Heading Assistant

The commander's log features a navigation tab where longitude and latitude values can be set for a specific point of interest. The system will automatically calculate a heading when approaching the target body (planet).

### Elite Overlay Window

Additionally, the heading text can be displayed as an overlay on top of Elite via an invisible window that you can place in your desired location.

### Visual and Audio Information Announcements (Speech Event Editor):

- Performs cargo limpet checks when undocking:
  - Prospector and cargo limpet controller
  - Recon and repair limpets
  - Hatch breaker limpets
- Crew member check for ships with SLF fighter hangar
- Conflict Zone warning
- Anarchy system warning
- High security system warning
- Compromised nav beacon announcement
- Hazardous Resource Extraction Site announcement
- High value targets announced – see piracy
- Hot Target announcements – see mercenary
- Low fuel level warnings
- Docking rejection warnings, including the reason for refusal
- Notoriety level warnings
- Criminal activity warnings
- Capital ship presence

### Visual Aids

- Heading assistant
- Landing pad docking assistant (Orbis, Ocellus, Coriolis, MegaShip, FleetCarrier, Asteroid Base)



- Docking assistant – information on available services
- Mining assistant – information on prospected asteroids
- Target ship assistant – shield/hull health, legal status, Cmdr name, human player indicator
- Notification of impending (NPC) interdiction
- Notification of remaining jumps to final destination
- Notice board with the 10 most recent announcements

### Fleet Carrier Support

- Audio and visual warning of impending decommission
- Tracking of carrier finances
- Tracking of carrier crew/roles

### Piracy / Mercenary Game play additions

- Ships equipped with cargo manifest scanners – visual and audio indication of ships with high value cargo (**Note:** this feature is currently waiting for Frontier to address a missing event in the Journal logs)
- Targets with a bounty are highlighted and announced
- Entry into High security systems is announced
- Missing limpets announcement for ships with hatch breaker controllers

### Bounty Hunting Game play additions

- Record and search for systems with known Compromised Navigation Beacons (CNB) and Hazardous Resource Extraction Sites (HAZ Res)
- Missing SLF pilot check and announcement

### Mining Game play addition

Ships equipped for mining:

- Limpet check reminder upon undocking
- Tracks minerals refined (per session)
- Tracks current limpet count (per session)
- Display of the cargo total, remaining limpets and materials refined
- Prospector information display
- Records locations of Ringed systems with hotspots
- Search the database for specific combinations of BGS state

### Exploration Enhancement

- Graphical effect for planetary landings
- Automatic switching to suitable consoles when in Analysis mode
- Automatic screenshot to PNG converter, including renaming the files
- **Commander's Log** – a complete application in itself (see next section). Captures a log of strange and interesting systems encountered on your journey.
- Bookmark star systems
- Search and record POI signal sources
- Heading assistant – user defined longitude and latitude navigation

### Automatic console switching

Automatic switching of console roles in response to the game play occurring at the time. Launch a fighter and the SLF and weapons consoles become active; switch to the SRV and the buggy console becomes active. Automatic and seamless switch over to super cruise and exploration consoles.

### Simplified Configuration

One – click automatic key binding and synchronisation between Elite and EDCD application. With once click, all the key bindings required by this application are brought over to Elite by replacing unused bindings, or as a fall-back, secondary keyboard bindings.

### Customisable COVAS Assistant Voices

Select your preferred Windows TTS voice to accompany COVAS.

Select other voices for system authority vessels and select/deselect voices for use by NPCs.

Built-in utility included for voice selection and testing.

Methods available for the possible expansion of available voices for all users of Windows 10! See the separate guide on this topic.

### Flexible Screen Layouts

Position the output windows on any monitor, re-size the windows and even create margins so that the rendered output matches the dimensions of the secondary monitors.

Switch roles between the consoles.

### Adjustable

Plenty of tweakable settings to adjust colours and layout positioning and element sizing.

Add / remove icons, rebind keys, show or hide labels.

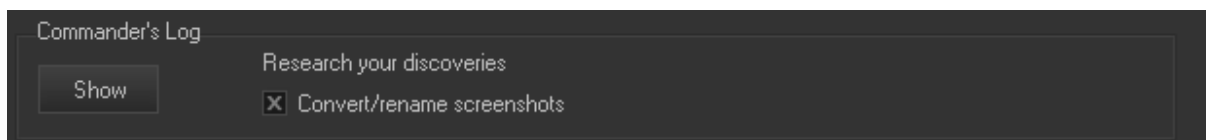
## Commander's Log

A complete application built-in.

The commander's Log is a comprehensive set of hooks and rules designed to capture the names and bodies in the Elite universe where strange and interesting stellar peculiarities exist.

Stellar features of interest include:

- Systems containing 5 or more of the materials needed for FSD jumps (jumponium)
- Landable planets with rings
- Landable planets with a terraform state
- Landable planets with an atmosphere (Odyssey)
- Landable high gravity planets
- Landable large planets
- Planets with wide rings
- Planets in close orbit
- Planets with moons in the rings
- Moons with moons (nested)
- Really small bodies
- Bodies with fast rotation
- Bodies with fast orbits
- Bodies with high eccentricity
- Stars - close binary pairs
- Stars - colliding
- Stars with rings
- Systems where a codex discovery was made
- Ringed bodies with hotspots / geological POIs



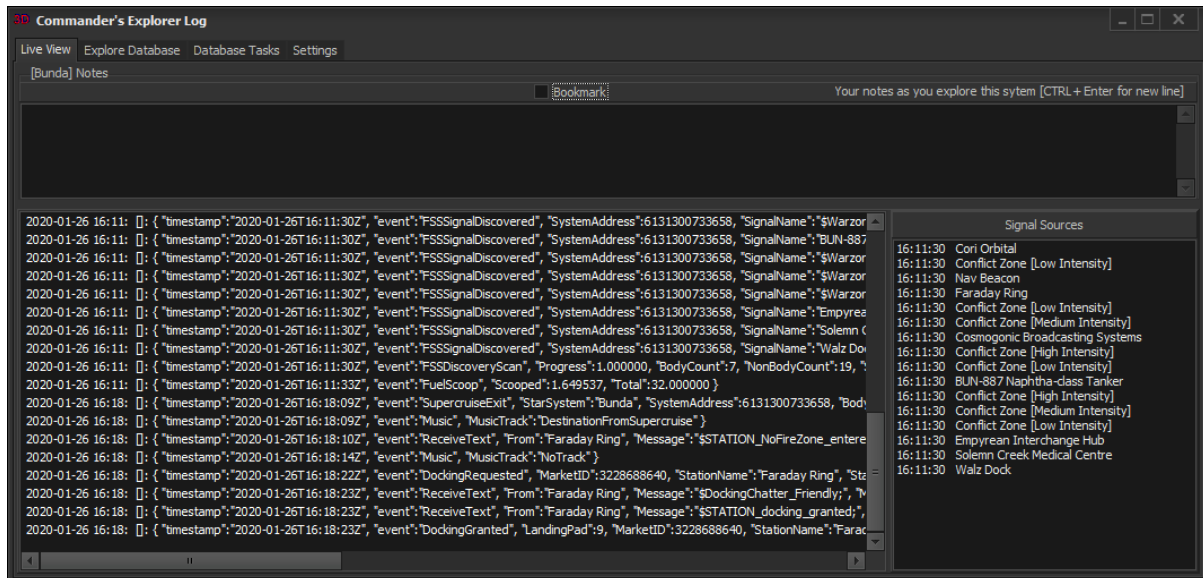
The **Convert/rename screenshots** option activates the feature to convert bitmap images to png images in the folder Elite uses to capture images. Additionally, the file is renamed to something more useful which includes the date/time, system and body name.

The Commander's Log has four tabs across the top to perform the following functions:

- Live view of the journal logs
- Live view of signal sources
- Explore the database of previous events
- Download EDDB database updates, import journal logs
- Configure which events are written to the database

## Live View

Live view is linked to the current system in Elite and shows any notes you have recorded for this system. You can bookmark this system for your easy reference at a later date.



When a commander jumps to a new system, the Commander's log module will analyse the results of a DSS scan and report back any features of interest which are categorised and stored in a local database for later analysis.

## Additional Features

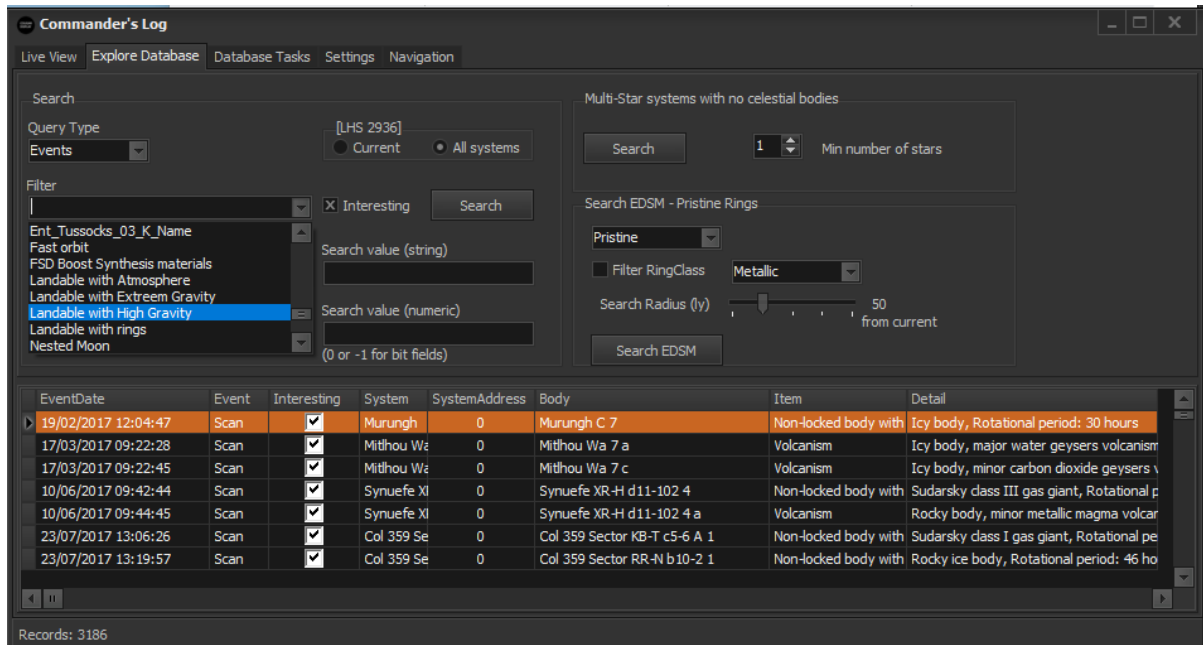
Configure a UI to enable/disable settings/persist settings.

Display of the signal sources in the system.



## Exploring the Commander's Database

The database contains a rich set of information which can be searched.

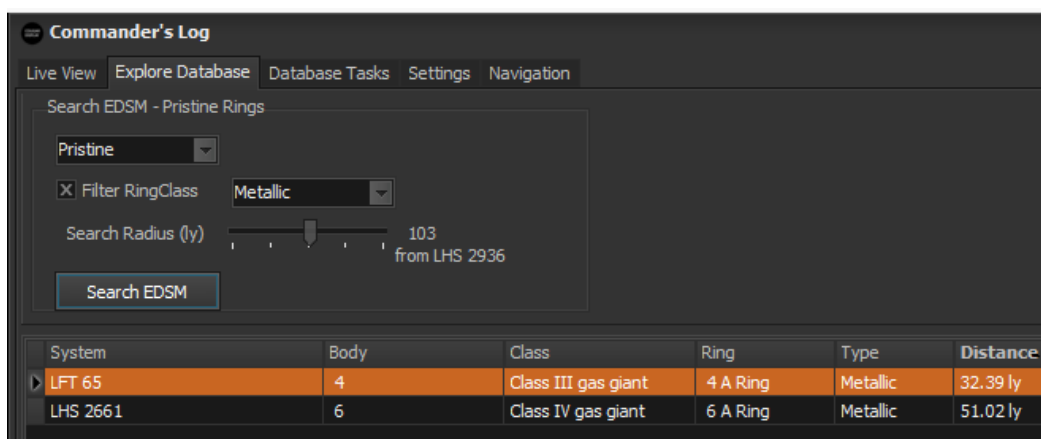


The Commander can:

- Look for any of the “items of interest” features (nested moons, colliding binaries, etc)
- Look for codex entries
- Search in the scan events for Stars, planets and rings of interest (radius, atmosphere composition, etc)
- Search for a multi-star system with zero bodies which is something I know from the forums that some Commanders would like to find
- Search for rings with hotspots / geological POIs
- Search for Pristine Metallic Ringed systems nearby

### Mining Assistant - Searching for Pristine Metallic Ringed systems nearby

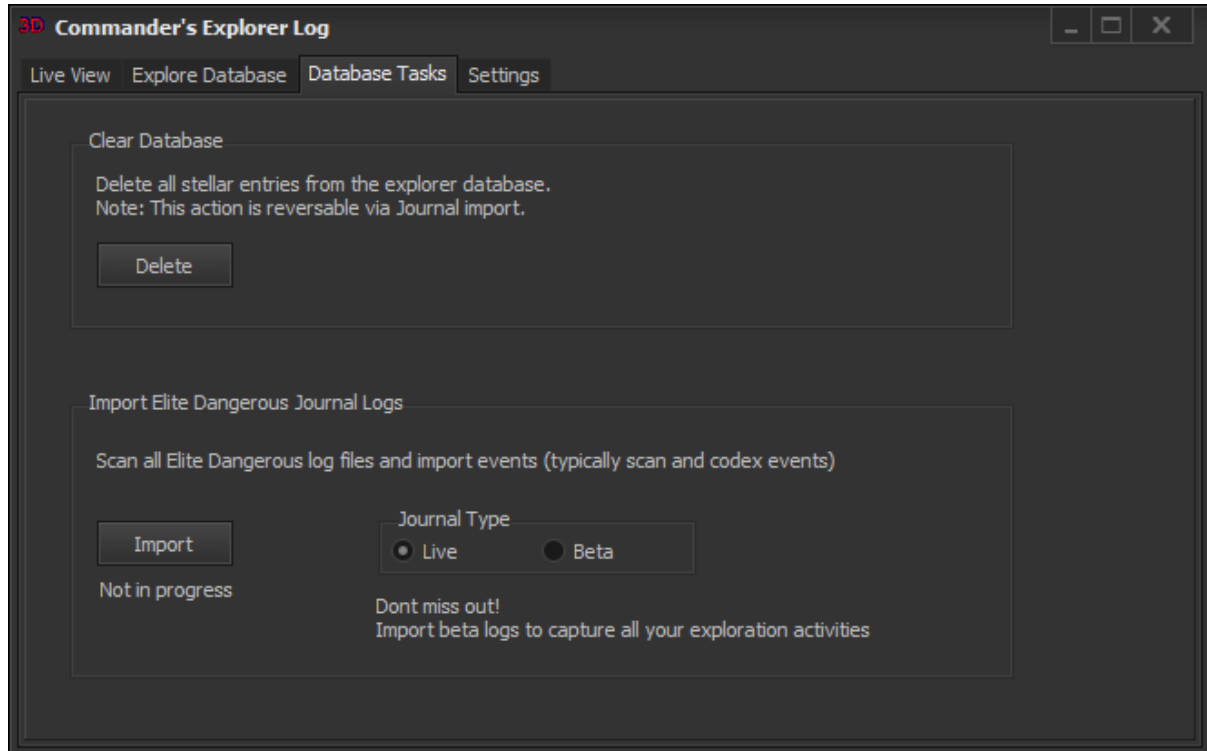
Using EDSM, searches for specific reserve levels of planetary rings can be located in systems surrounding the current position. When laser mining Painite, this feature allows the commander to quickly locate pristine metallic ringed systems.



## Database tasks

### Clear Database

Database tasks tab allows the commander to clear out the portion of the database relating to journal scan events. This is useful so that a re-read/refresh of the journal logs can be performed. This is a safe operation and bookmarks, system notes are not affected.

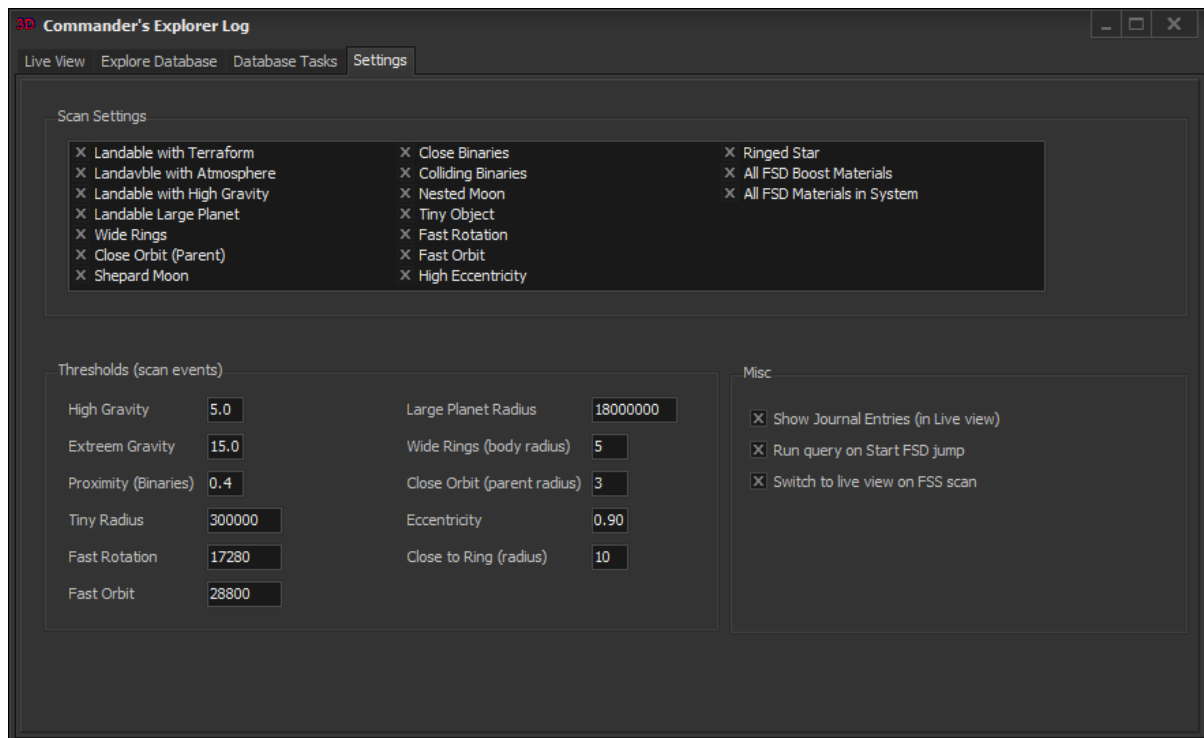


### Import Elite Dangerous Journal Logs

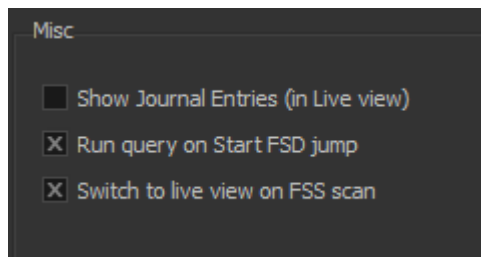
This option populates a local database with all the codex and scan events found in the journal logs. There is a wealth of information contained in these logs and some of it is very useful to collect – ie for mission route optimisation.

### Commander Log Settings

The Commander can also tweak the settings of the module so that he can define what an “interesting” item means.



## Miscellaneous Options



Capture the journal entries as they are written by Elite.

Optionally runs a database query to show a summary of the new system you are about to jump to and switch to the **Explore Database** whilst the jump is in progress.

Another option switches to and activates the Live view tab so that signal sources can be seen, as well as the results of the scan analysis looking for “interesting” items.

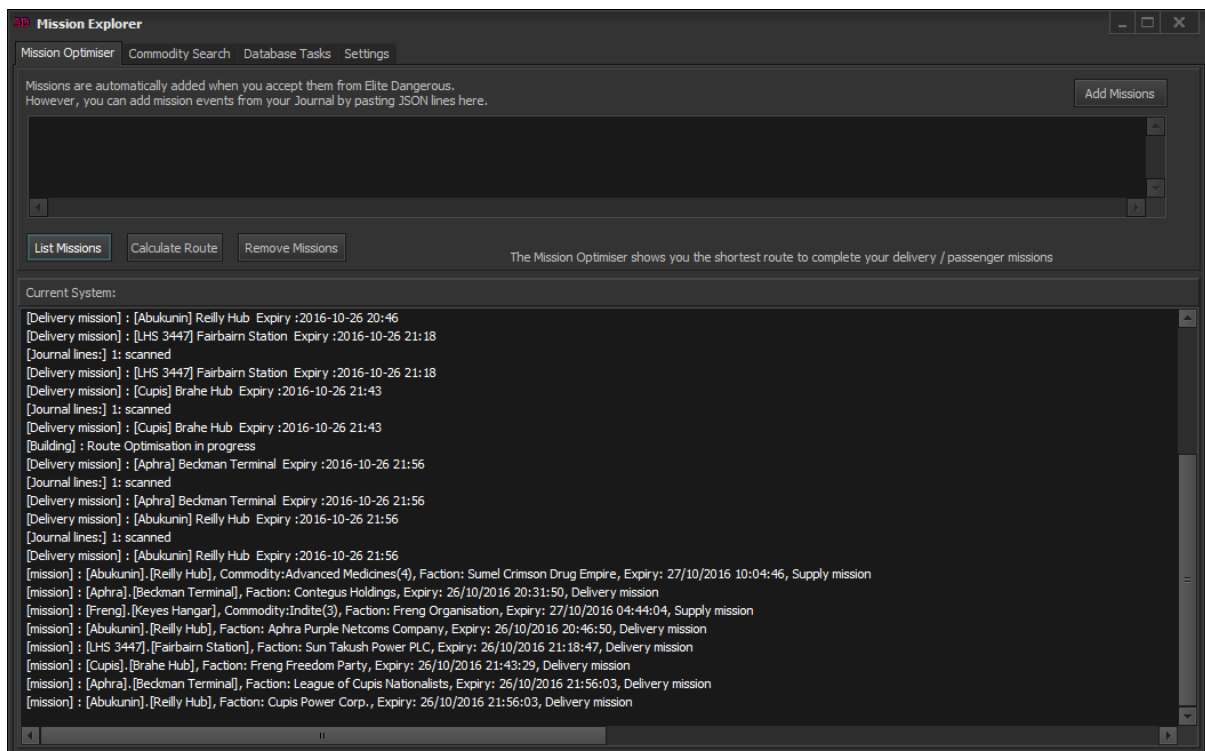
## Mission Explorer

The Mission Explorer module consists of:

- Mission Optimiser
- Commodity Search
- Route Plotting / Neutron star route plotting

### Mission Optimiser

This module can help a Commander plan his routes from station to station. On each new mission accepted, the system builds a list of known missions and calculates the most efficient route between star systems. The computed route is based only on the systems in the missions and performs distance/jump calculations based on a look up to a cached copy of EDDB's database. As part of the supply/demand missions, the system will add stations you must visit to buy goods (using the commodity search module functionality). Note, however, it doesn't take into account available cargo space at any one time – so this is something you'll need to manage for yourself!



There is an advanced user feature available so that Commanders can cut/paste an entry from the journal file and have the mission optimiser add that as an available mission.



## Route Plotting

Various routes from different sources can be plotted in the Galaxy Map and a visual representation of the route shown.

Routes can be generated via Elite missions (cargo/passenger), manually created by adding waypoints, or automatically added to waypoints via plotting a route in Elite Dangerous.

## Mission Optimiser Route Plotting

Mission routes can be plotted on an in-built galaxy map. This tool allows the commander to visualise the mission route and see the results of the mission optimiser. Using the left, right and middle mouse buttons, the galaxy map can be rotated, strafed and zoomed. The keys WSAD also perform the same function.

The nodes on the plotted route can be selected (left mouse button) and the camera will focus and zoom in on the selection. In a future release (scheduled for Q3 2020), zooming in a little further will then display the system orrery.

Route plotting is useful for long missions and can identify loops and inefficient waypoints.

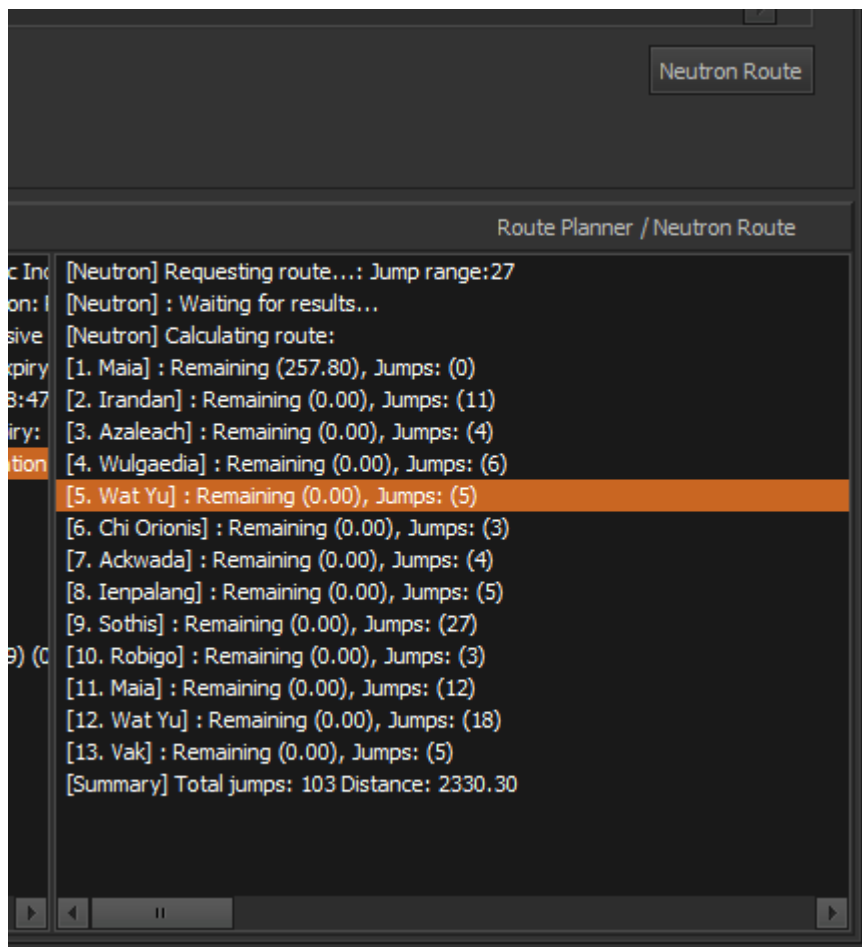
## Neutron search

The **Neutron search** option allows the route to be altered to include the use of neutron star (boosts). This option is especially useful for planning long range journeys where the number of jumps can be significantly reduced.

The system already knows about the current jump range of the active ship and takes this into account when performing the route. Different results could be obtained by having an empty cargo hold/less fuel when initiating the plot.



Clicking on the star systems listed in the route output copies the system name to the clipboard for easy use within Elite.



### WayPoints / Manual Route Plotting

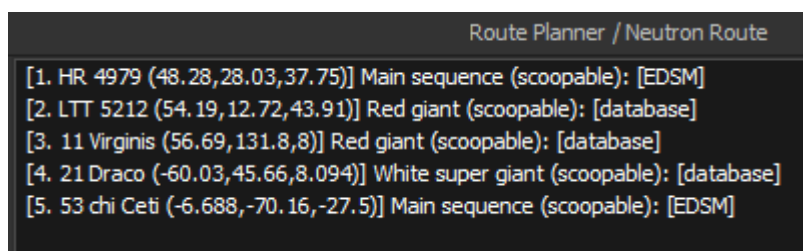
In addition to the mission route plotting, manual **waypoints** can be plotted on the galaxy map.

Use the **Add Waypoint** button to add system names to use during the route. Click the **Waypoint Route** button to plot the route plot and optionally check the **Neutron Search** option to plot the route using neutron star FSD boosts.

System names that can't be located (in your explorer database or via EDSM) will be removed from the plotted galaxy map.

### Elite Galaxymap Route

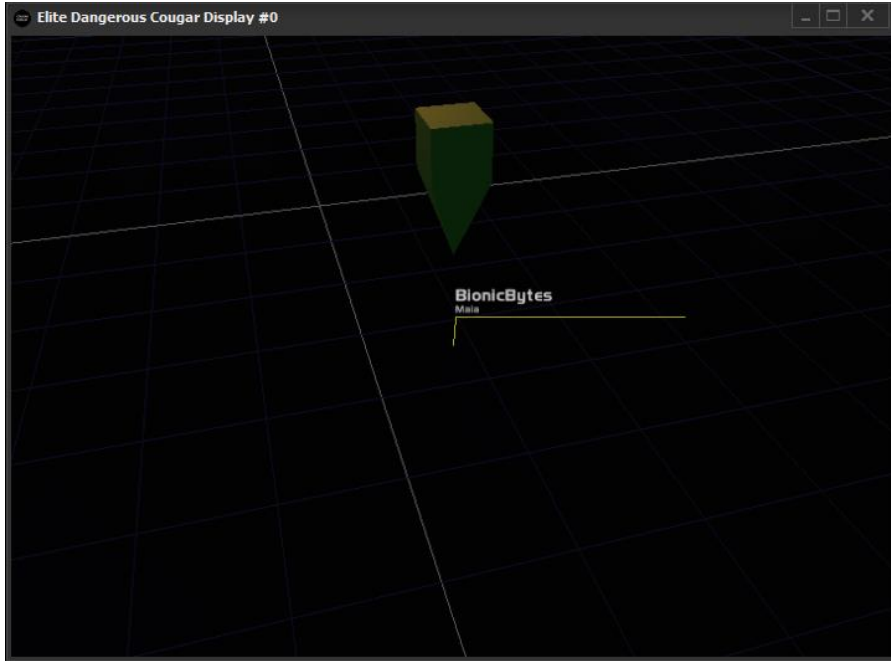
When a route is plotted in-game, the star systems are added to the waypoints list. Clicking the **Plot Galaxymap** button plots the route onto the galaxymap MFD and also gives a route summary in the Route Planner Display.



This display gives an indication of the main sequence star, if it's 'scoopable' and if the star system is already known – ie making it easy to spot an undiscovered system in the route.

## Galaxy Map / Orrery

The galaxy map shows the route plotted by the Mission Explorer module – either mission routes, manual waypoints or the in-game route. If neither of these have been populated, then the galaxy map centres around your CMDR's last known star position and is indicated by a large (green) pin drop icon.



The display can be rotated, translated (left/right) and zoomed (forward/backward) by the use of left, right and middle mouse buttons.

Additionally, the **WSAD** keys are assigned to the forward, reverse and rotate (left/right) functions.

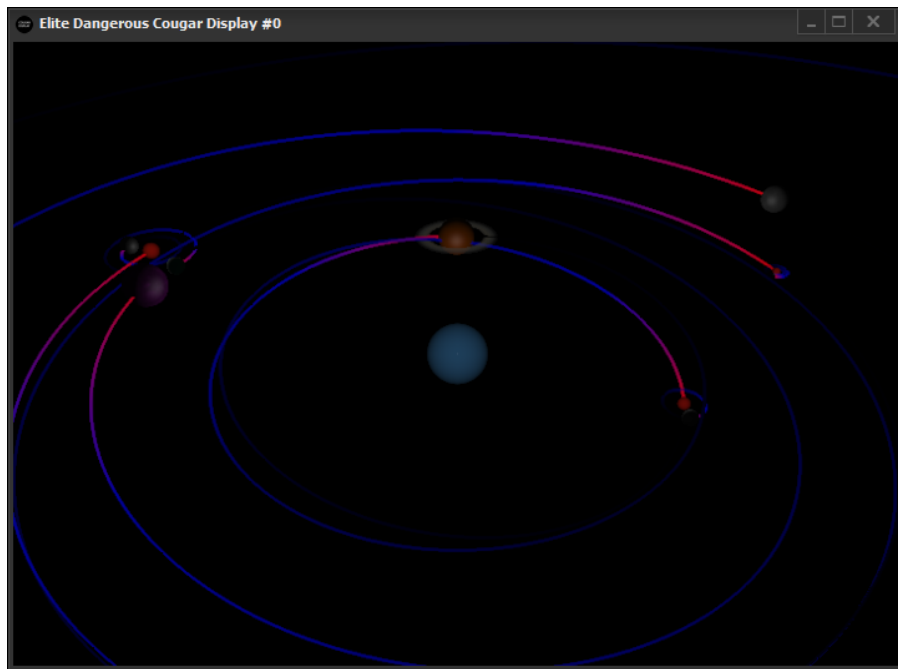
### Galaxy map Built-in Orrery

When a node has been selected in the galaxy map, a zooming in (W key or middle mouse wheel) towards the node will automatically switch to the orrery when the camera is very close up.

When in the orrery, moving the camera far away from the central star will switch back to the galaxy map.

This feature is particularly useful when plotting journeys as it allows for a quick inspection of the systems along a route without having to travel or open the system map in-game for each star system.





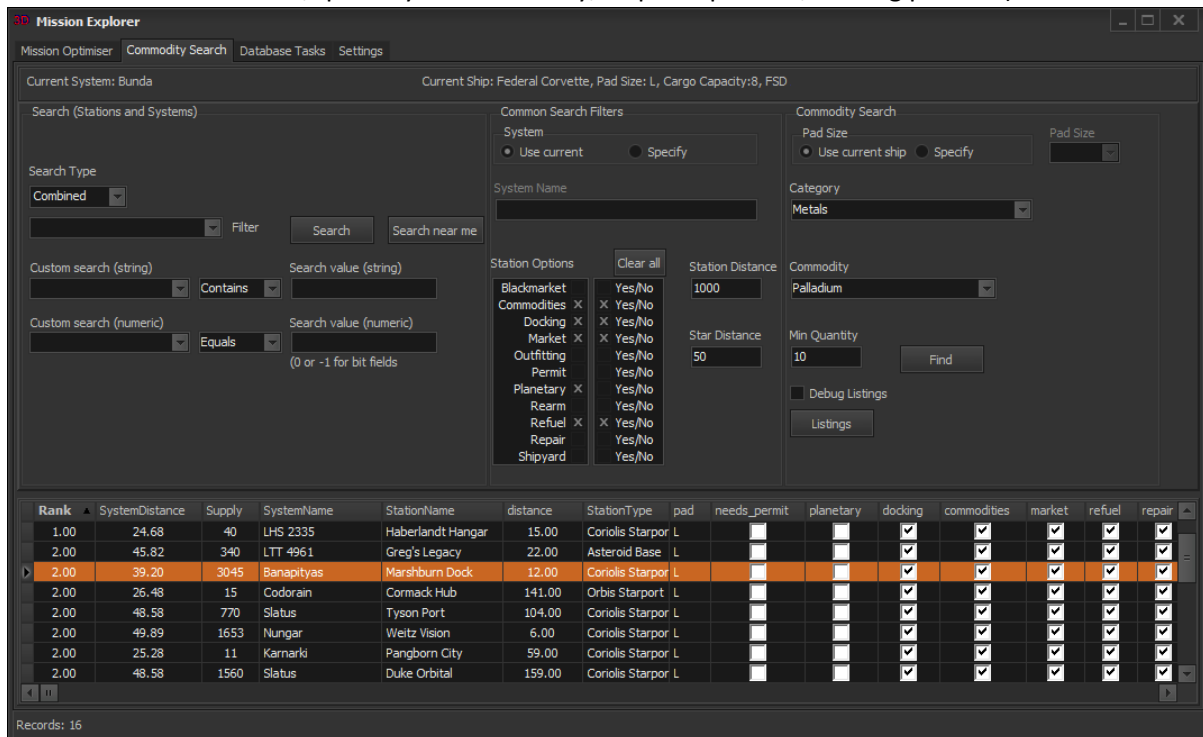
There are no UI controls or menus in this mode for the Orrery.

## Commodity Search

The Commodity Search tab contains live in-game information for the current system, your ship and it's FSD jump range.

This module allows a commander to

- Search for specific in-game commodities and locate a station with a certain quantity
  - Can also search within a distance from a specified system, or the current system.
- Results are ranked for the most efficient use of time (considers number of jumps, distance of station from star, quantity of commodity, requires permits, landing pad size)



There are options for additional criteria to reduce the number of stations returned in a given search such as permit requirements, planetary bases, distance from station and star system distance from current or specified location.

Commanders can explore the database looking for stations offering a particular set of facilities (rearm, refuel, etc) as well as the controlling faction state.

The station/system search function allows Commanders to locate systems in a specific combination of state (eg Boom + Public Holiday + Expansion + Civil Liberty)

## Alerts

The **Mission Explorer** Commodity Search (INARA) tab allows the CMDR to set up notification alerts when you are navigating the galaxy - so that you are informed when you are near to something you are interested in.

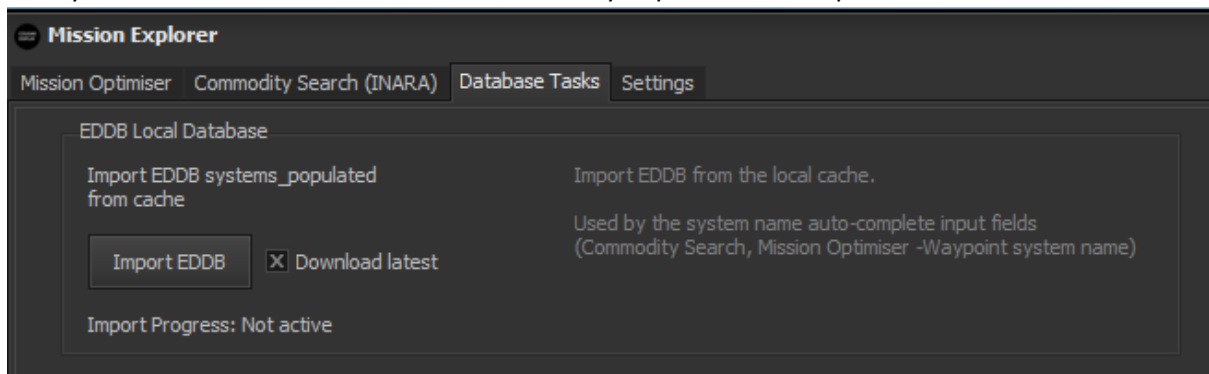
There are two types of alerts:

- Commodity Alerts
- Service Alerts

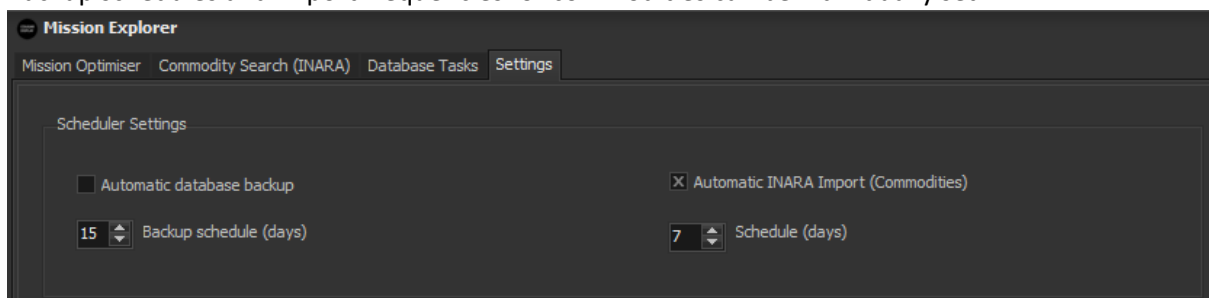
Commodity Alerts are for searching for trading commodities (eg gold) and Service alerts are for services such as “Material trader” or “Fleet carrier outfitting”. In either case, the alert system allows you to define the radius of the search and display the results in the main flight console, or a custom panel.

## INARA Import

The system allows for automatic INARA commodity import and backup of database files.

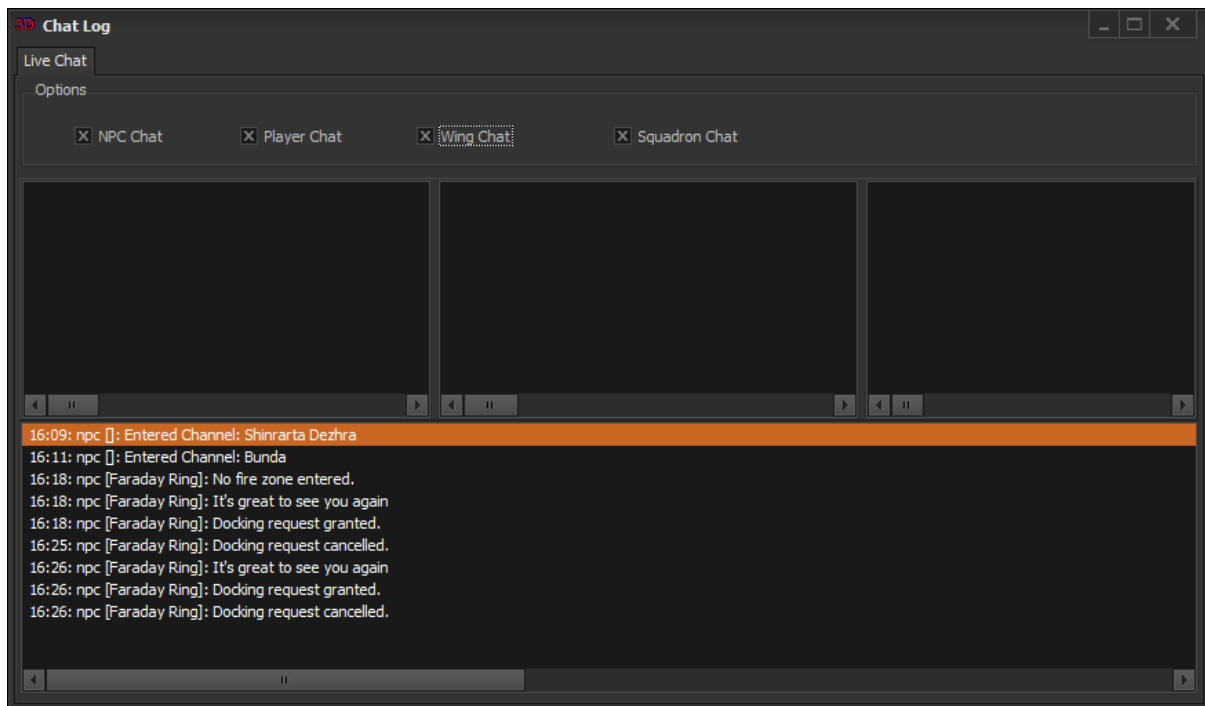


Backup schedules and import frequencies for commodities can be individually set.



## Chat Viewer

A window with views to separate and display NPC chat, player chat, wings and squadron messages. Simplifies the display of messages by resizing the space for viewing them to make them more readable.

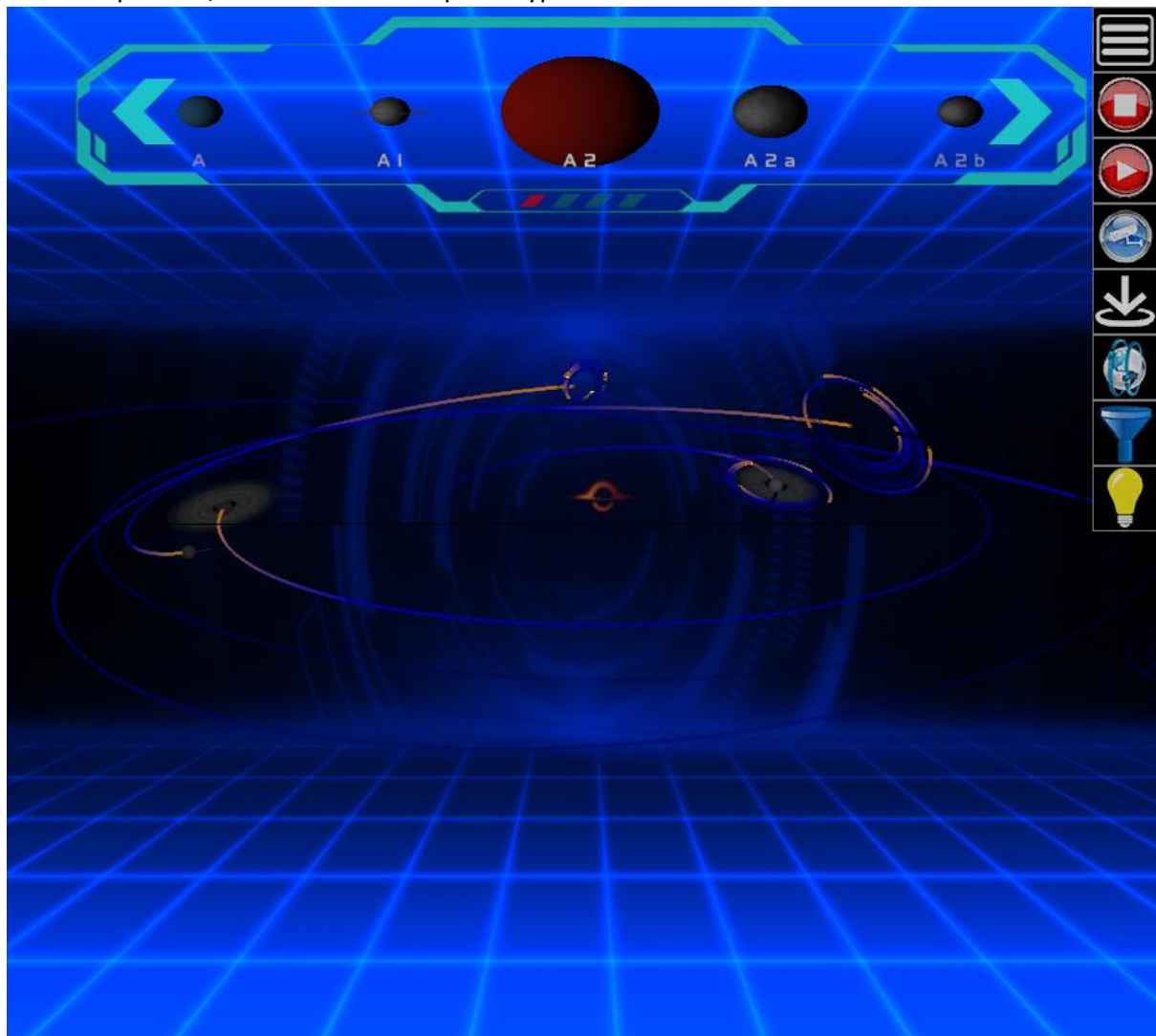




## Orrery

Accessing the Elite system map (or orrery view) will bring up the Orrery view. The system planets displayed on the Orrery are obtained from EDSM (or the Commader's journal files / database in the event of no EDSM data).

The Orrery contains a user interface which can help locate and identify any planet class, sun or body. There are filters to colourise the planets so that multiple planets can be quickly located based on their composition, volcanism or atmosphere type.



The colours used in the Orrery can be customised by the Layout Editor utility built-into Cougar Display; there are several styles of background to choose from.

A combination of mouse and keyboard can be used to pan, zoom, rotate or select bodies for a closer look. View the system from any angle you like – examine the shapes of the orbits.

When no user input has been received (for a configurable period of time), the Orrery enters “demo mode” where it selects random views of the system.

## Odyssey Support

Elite Dangerous: Cougar Display supports Odyssey additions:

- Additional Elite ranks
- Commander's log – updated to include detection of landable planets with atmospheres
- Suits and upgrades
- Suit modules and upgrades
- Suit weapon modules and upgrades

To display Suit information, setup and use a custom panel and select one of the suit information panel options to display information about the current suit and equipped modules.