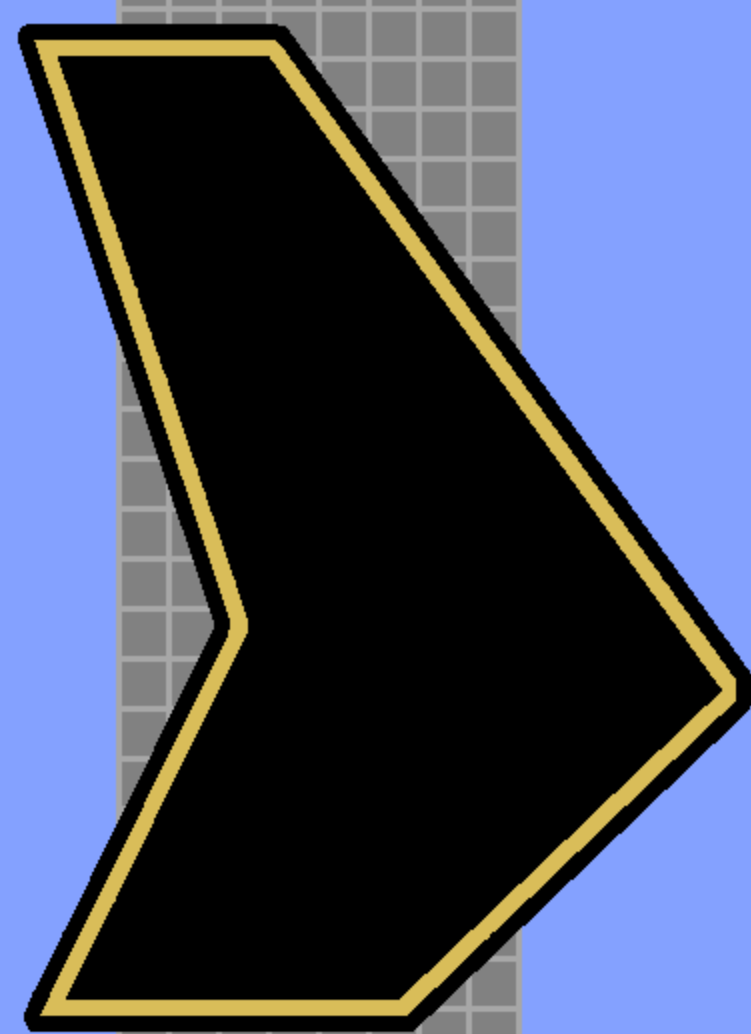




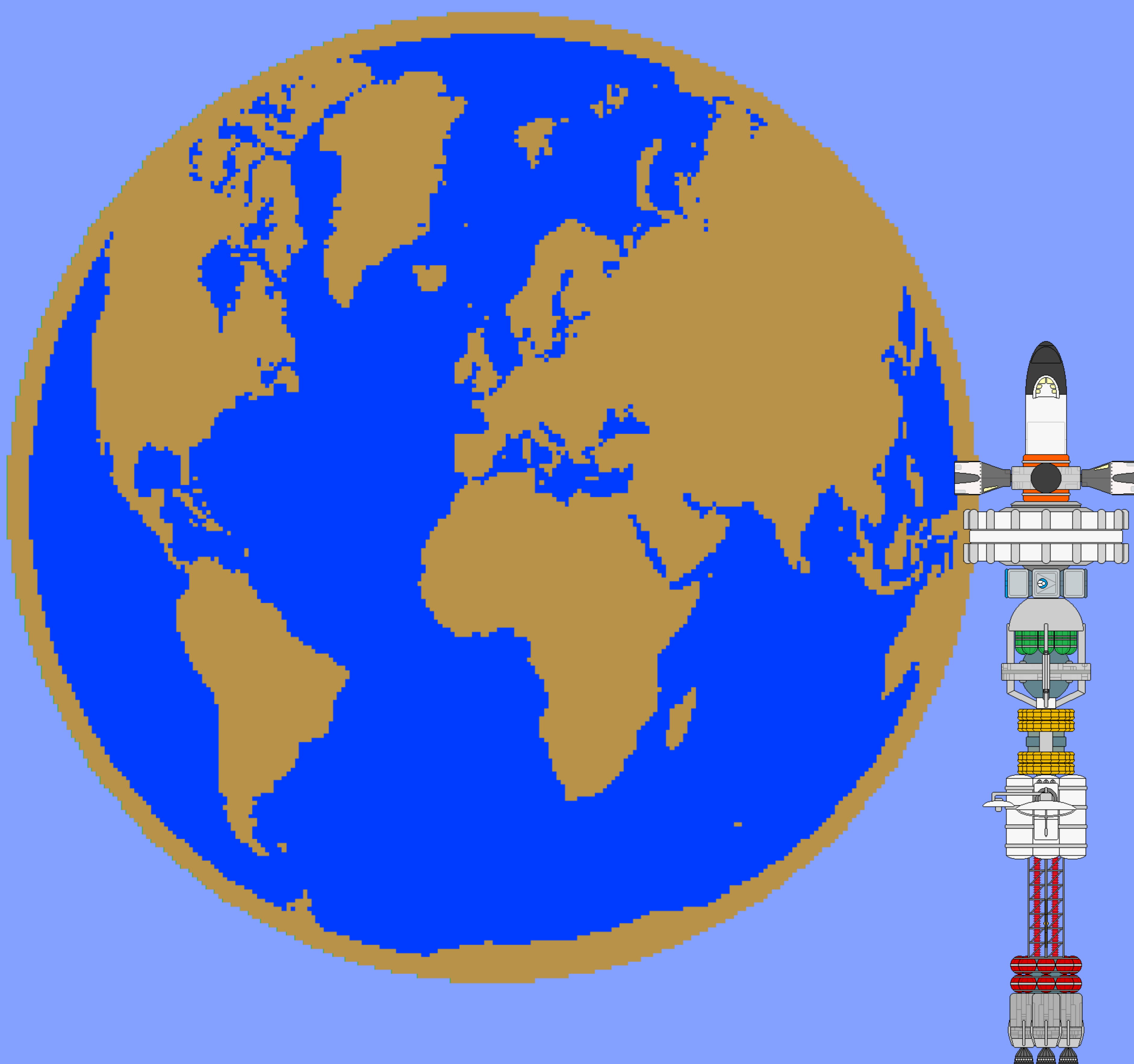
DYNAMICS'

STAR FLEET

STARSHIP RECOGNITION MANUAL

REPORT: TAU

EXTRASOLAR EXPLORATION VESSEL





FORWARD

My contribution to this project would not have been possible without those who came before me. Mainly, CaptShade, whose original drawings laid the foundation for my work by providing me the figurative and literal tools for my own creative output. Nichodo, who was a big help in creating aft and ventral views of various components. RevancheRM, whose ideas and drive helped me get a little more creative and better at something I really enjoy. And, most definitely, Neale "Vance" Davidson, whose enormous volume of work got me interested in doing this in the first place, and for inspiring us all.

- Adrasil

First, as always, thanks to Adrasil. Since partnering with him, I've taken some great artwork and added some context to it. He's really allowed me to scratch my writing itch, to the point it sometimes bleeds, but still feels Oh-So-Good. Next up, of course, is Timo Saloniemi, who's work I've been following for around two decades and I greatly respect. The artwork in these "Starship Recognition Manuals" are 97% based upon the ones he describes textually in his grand opus, the "Hobbyist's Guide to the UFP Starfleet and Its History," and 3% derived from what he has inspired in us.

- RevancheRM

Additional reports may be found at: starshiptracker.com/deltadynamics

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- TIMO SALONIEMI: Author of "Hobbyist's Guide to the UFP Starfleet", the inspiration for these SRMs. A direct link to his Google Drive may be found on most deviations in RevancheRM's gallery.
- TAU SERIES:
- Original inspiration from: Mike Okuda (& Kris Trigwell)
 - Incorporated parts from: CaptShade

NOTE FROM THE WRITING EDITOR

These ships do not always exactly match the specifications Timo provides in his technical section for each class, as I've adapted them in ways that allowed them to fit a bit better with the guidance provided by the starship construction rules in Steven Long's "Spacedock". I've also changed some dates around when I found them in conflict with other information Timo has provided. These two books greatly inform my own alpha-canon and I urge you to look up both online, as offered free by their respective authors. (Links to both are provided on the Delta Dynamics site.)

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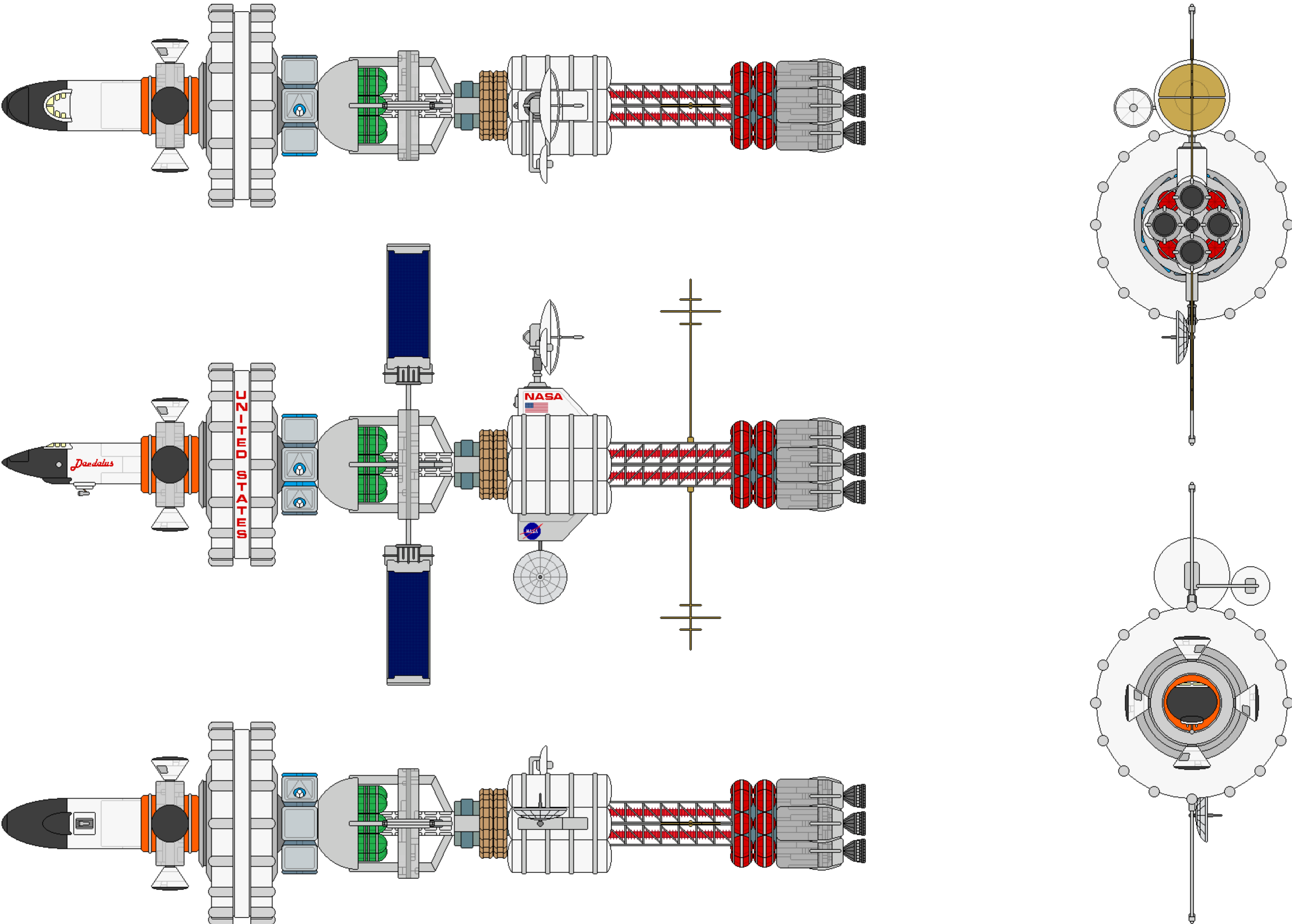


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TAU ONE - DAEDALUS



CATEGORY:	EXTRASOLAR EXPLORATION VESSEL		
OPERATIONAL:	2036 - 2037 (LOST)		
CONSTRUCTED:	1 (OUT OF SERIES OF 5)		
DIMENSIONS:			TACTICAL: N/A
LENGTH:	214.8 M		
BEAM:	50.3 M		
HEIGHT:	109.9 M		
MASS:	6,200 MT		
PERFORMANCE:			AUXILIARIES:
MAX:	0.2 C		- 4X DRONE PROBE CAPSULES
ENDURANCE:	6 YEARS (W/ CRYOSLEEP)		
COMPLEMENT:			
CREW:	15		

GENERAL INFORMATION

In 2033, the Secretary General of the New United Nations declared an unqualified success of the planet-wide effort to divert the Swarm, a group of large asteroids which threatened to impact Earth over a three-year period. The world came together to prevent an extinction level event, putting aside geopolitical concerns for the greater good. As the program required more than just the "greatest" nations to be successful, citizens of poorer states & regions experienced a paradigm shift regarding their place in Humanity's future; they demonstrated their importance and value through technical expertise, labor provisions, and geographically-advantageous orbital-launch facilities, proving economic parity was not a requirement to be seen as an equal on the world stage. Nascent regional partnerships with no alignment to either the Eastern Coalition or the Western Alliance began forming, providing a global voice for the underserved who were equally critical in saving all life on the planet.

Collaborative organization was a proven concept. The Americans were well aware of this, having been a founding and leading member of the greatest alliance operating at that time. However, the opportunity to take a breath following the events of the Swarm prompted the United States to conduct an evaluation of its future leadership role in the world and found it lacking. The country had a proud tradition of trail-blazing, which included the benchmarks set with their lunar landings



TAU ONE - DAEDALUS

GENERAL INFORMATION (CONTINUED)

and orbiter program. However, since 1988, the role of the US as a space leader had been dramatically upset by the Chinese/Great Khanate DY program. Additionally, significant space achievements after the Augment Era were accomplished singularly by, or in cooperation between, the European Space Agency, the Western Alliance, and the International Space Agency. The US government wanted to set a new record, something that the world would observe with bated breath and record for posterity as yet another great American triumph.

The target was to escape the Solar System. While the goal would not necessarily result in the planting of an American flag, the concept promised the unprecedented historical moment NASA was tasked with meeting. Setting foot on other planets' moons had been done before; a new landing would be nothing spectacular. Speed and endurance records were frequently broken and poor contenders for creating an enduring legacy. However, the first crew to pass beyond the heliopause would achieve something that could not be one-upped.

The vessel, designated "Thousand Astronomical Units" (or TAU) as a grandiose declaration of bold intent, needed to be something clearly and boldly American, without needing to incorporate technologies and hull designs which were new and unproven for the expected duration of the crewed flights. There was no need to spend a great deal of funds modifying an inner-system vessel to accomplish the endurance task required of an extra-Kuiper transit. The TAU spacecraft needed to travel beyond Neptune, with initial missions tasked with exploring the Kuiper Belt 30 to 50 AUs away and follow-on missions set to cross the heliopause itself (123 AUs), with a final target distance of 350 AUs from Sol assigned to later expeditions.

NASA looked back to its Apollo and shuttle roots and came up with a modular concept that incorporated the design philosophy of both, achieving the sought-after "American familiarity". The modularity feature incorporated mostly tested and trustworthy technologies in a manner where modules in the development and manufacturing stages could pivot to meet evolving mission planning. A forward element based on the NASA orbiters would serve as the flight deck and operational nerve center. Attached directly behind that was the docking module (referred to as a "ring"), where up to four independent auxiliaries could be parked. These usually included repurposed capsules modified to serve as sensor-laden drones and Mars-style landers—equipped with surface anchors but not rovers—to allow exploration of planetesimals positioned along the established route of the TAU flight.

The "off-duty" living spaces for active crew members were located entirely on the habitat module. This component was the only one to incorporate centrifugal gravity, providing a 0.4 g environment through a rotation speed of 3.79 RPMs. The habitat module included eight individual sleeping compartments, a gymnasium, shower and sanitation facilities, a semi-automated medical bay, galley, entertainment theater, and personal communication space. When the operational tempo required more than eight crew members to be active, hot-bunking was the expectation. Crew members could also utilize the rotation to jog along the central pathway of the habitat module.

Immediately following the habitat module was the cargo section comprising eight modular pods, three of which provided individualized Singh-type cryogenic hibernation chambers for the crew. For TAU One, the mission called for all 15 personnel to enter the hibernation state shortly after the trans-orbital thrust phase began. As the mission progressed, the ship's main computer would wake up select members of the crew for predetermined mission events or in the event of an emergency. The other five pods were packed with various provisions, such as food, medical supplies, and spare parts. Accessing the stores required a pre-planned procedure for unpacking and re-packing all intervening materials, a labor and inventory-intensive process. This led to a concept of pre-staging certain materials in what crews called the "pantry", but was otherwise known by mission control as the "Ready-Consumables Corridor Module".

Aft of the cargo section, the enormous rocket bell-shaped life support module served as an armored cowl for the eight large oxygen tanks and externally-mounted equipment necessary for preserving life on the ship. The added protective mass on this particular module aimed to minimize the effect of any impact event upon those specific critical functions, thereby freeing up the crew to prioritize and resolve other damage control issues the vessel might suffer. The enormous and rotatable panels aft of the bell were designed to radiate waste heat away from the ship and were mounted on the support structure built around the central corridor module. This cage was intended to provide not only structural support for the ship while under thrust, but also served as adaptable equipment rails for most any add-on experiment, sensor, or other asset elected to be added to a TAU flight.

Habitable spaces accessible from the aforementioned corridor included the auxiliary control & distribution module and the engineering module. The former served exactly as indicated, overseeing the generation of electricity—including from the set of atomic batteries just forward of the engineering module—and its utilization by the ship and crew. The latter section provided internal access to the central bus units for both communication dishes (mounted dorsally and



TAU ONE – DAEDALUS

GENERAL INFORMATION (CONTINUED)

ventrally, above the four external hydrogen-2 fuel tanks), as well as the Fine-Structure Constant (FSC) transmitter. This device was a key component of the TAU missions: while the goal was to cross beyond the heliosphere, the FSC transmitter served as one of the methods to observe the outside universe. The subspace dimension, discovered in 2022, was still poorly understood, so the TAU missions were incorporated into the system-wide initiative to explore how objects in normal space might distort the perceptible fields from this new realm. Observing differences in the strength of the electromagnetic interaction between elementary charged particles, variances in gravity wells, radiation sources, or other fundamental forces might provide scientific guide posts to why measurable distortions (quantified as cochran units) occur. The TAU missions were tasked with surveying readings from the various points outside the heliosphere, serving as potential baselines for later voyages into the Oort cloud (2,000 to 100,000 AUs out) and beyond.

The engineering module also served to regulate and maintain the functionality of the four AmJet SJ-79 fission- and one P&W F100 central fusion-powered ion thrusters. This control was conducted across the same thruster superstructure that supported the massive transfer coils supplying energy to the electrical converters and provided the mandated safety distance from the two gas-core reactors (Block D and Block A, respectively), also manufactured by Pratt & Whitney. On both the dorsal and ventral sides of the superstructure, whip antennas were installed to transfer both active and passive signals to the interferometers located in the engineering module. Sixteen Type T fuel cells (for the reaction control system) ringed the reactor module itself.

Primary boost from Earth orbit was provided as an operational test of the much more efficient fusion-fed ion thruster. The adoption of this divergent propulsion technology was deemed an acceptable and minor gamble when weighed with the PR reward of highlighting "American ingenuity". The centrally-placed engine would remain at full thrust from the point of orbital departure until halfway to the heliopause. The TAU vessel would then rotate to face Sol over a 223-minute revolution and re-engage the fusion ion thruster to slow the craft to a full stop on the far side of the heliopause. When the mission was again in a transit (but extrasolar) phase, the fission engines would be engaged either as a pair or a quad set of movers, since the established nuclear technology was still regarded as more reliable for medium and short distance propulsion demands. If the fusion-powered ion engine failed to provide sufficient thrust at any stage of the post-orbital or return-to-Earth phases, the fuel supply for the fission engines was more than adequate to compensate. The recessed RCS would handle the restricted maneuvering demands for approach to Kuiper Belt objects of interest.

Ideally, the United States wanted to develop and build each of the TAU craft domestically. However, a great deal of expertise in spacecraft design, procurement, assembly, launch, and operations had matured worldwide since 2026 and the American administration at the time knew that garnering short-term political capital for the next election cycle (by launching a functional mission quickly) required leveraging that mastery. Sizable contracts were established with corporations in partner nations—most notably Canada, Germany, Italy, New Zealand, Ukraine, and the United Kingdom—in order to fast-track the construction of five modules of each type. Launch facilities in Chad, Ganon, and San Tome were paid handsomely for front-of-the-line scheduling to loft these modules and the assembly infrastructure that preceded them. Despite this being an international effort, it remained nominally an American one and not at all associated with the Western Alliance.

This was diplomatically troubling for some nations. Both China and India saw this as an about-face from the global effort to work in space in a cooperative manner. France was strongly vocal in its denouncements regarding its complete program exclusion. Then there were the non-governmental organizations that had stomached the negative global impacts of a massive space industry on the ground during the Swarm crisis, but stood up in protest when this new American effort slipped in right behind the General Secretary's victory proclamation and threatened to continue the same practices. China adroitly co-opted Greenpeace as a proxy force by providing training and submarine assets to insert activist "operators" to sabotage TAU mission components en route to Africa. At the orbital assembly facility, Russia was suspected of employing mercenaries in a successful heist of the five experimental EM field generators meant to provide micro-collision protection for the TAU vessels.

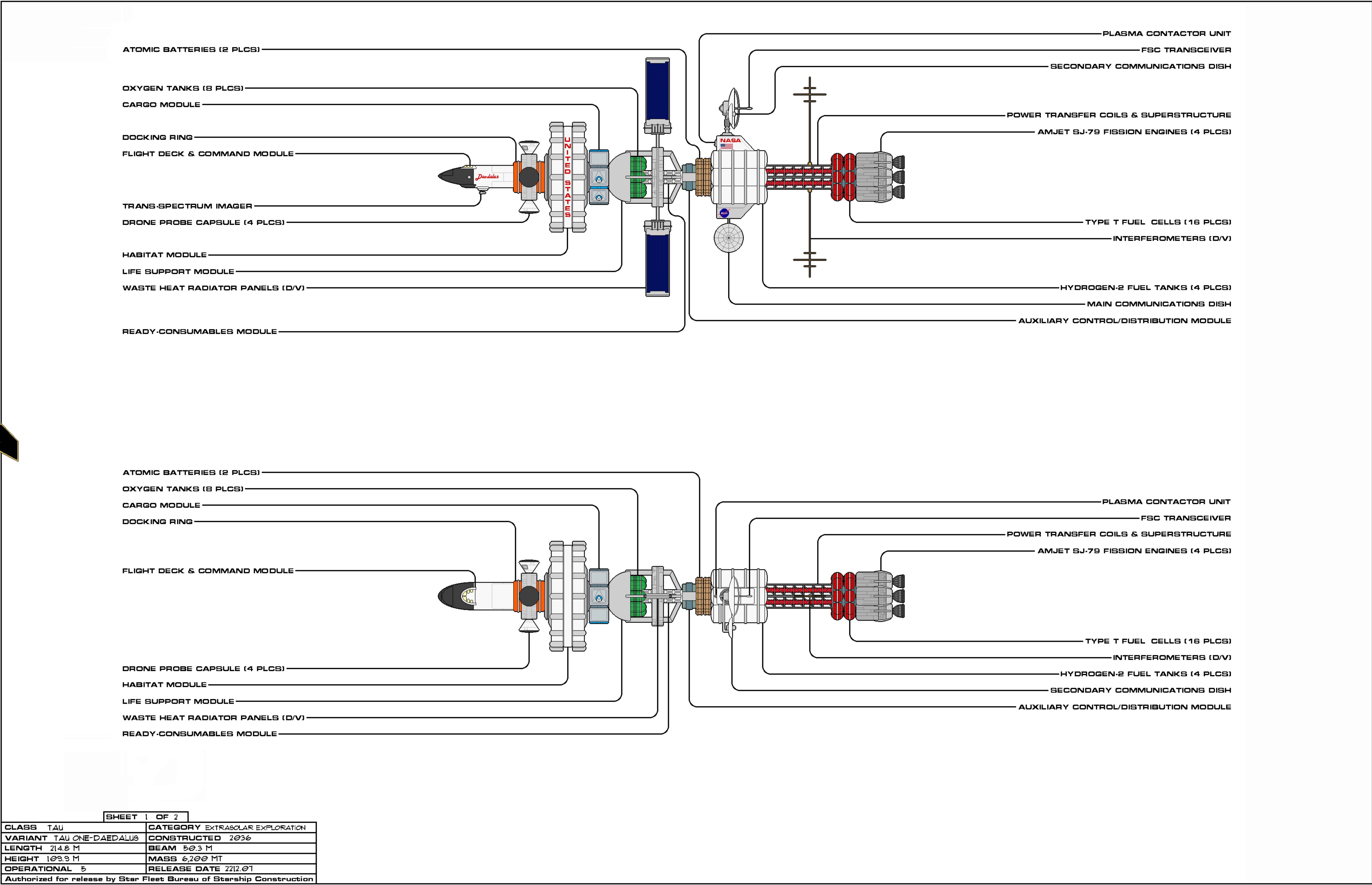
In February 2036, under an enormous amount of media attention (just as had been sought) the TAU One mission—dubbed Daedalus by the crew—boosted from orbit for the Kuiper belt along the solar ecliptic. In order to prolong the media's attention, each of the fifteen crewmembers entered cryogenic sleep on successive days, following the broadcast of farewells to their loved ones and Earth. Updates were provided by NASA public relations as each milestone (typically planetary orbits) was passed. Inspiring views from external cameras and tracked sequences that swept through the ship were common features on newscasts. Haunting images were shown of the slumbering astronauts, reminding everyone of the Human aspect of the mission.

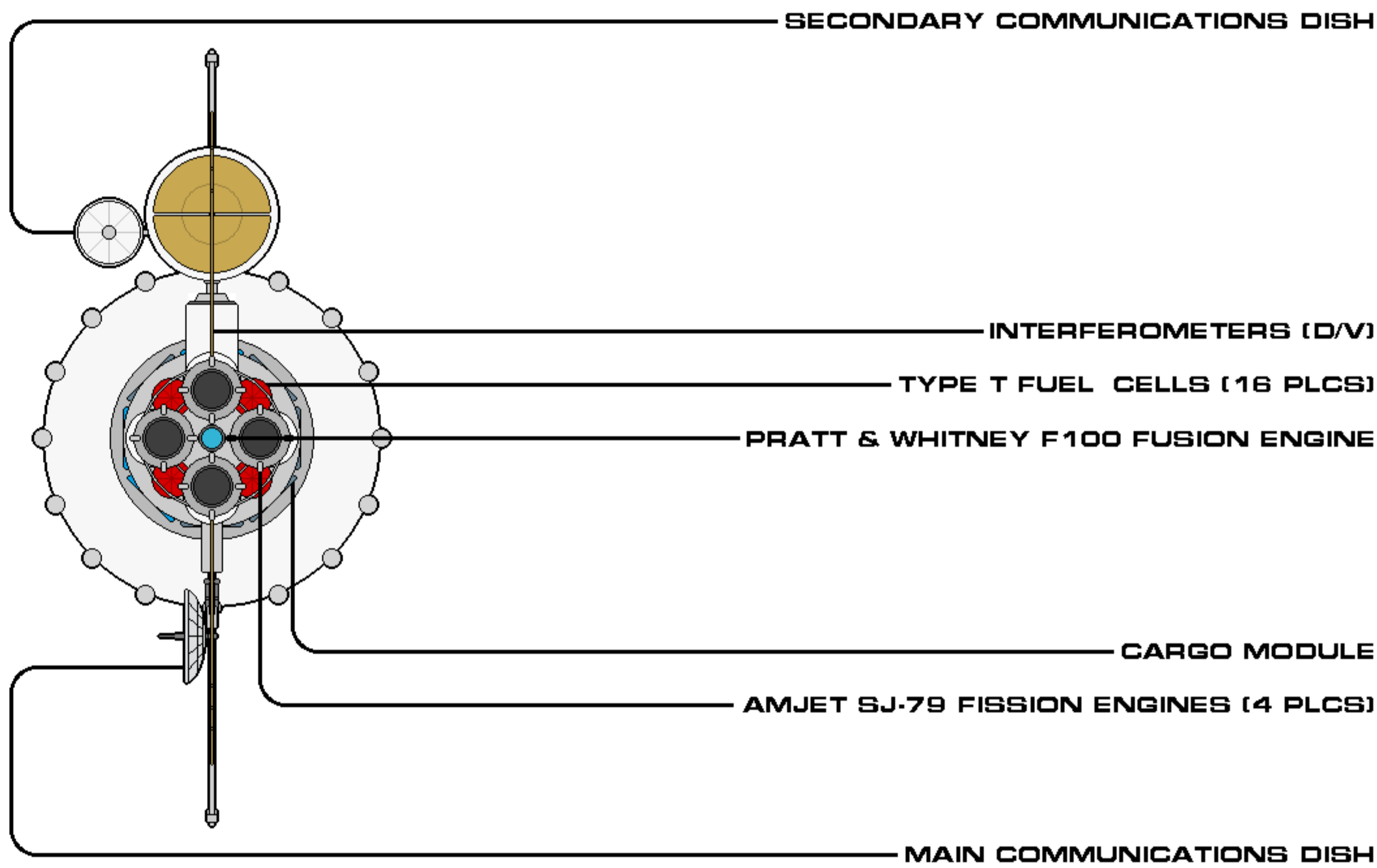
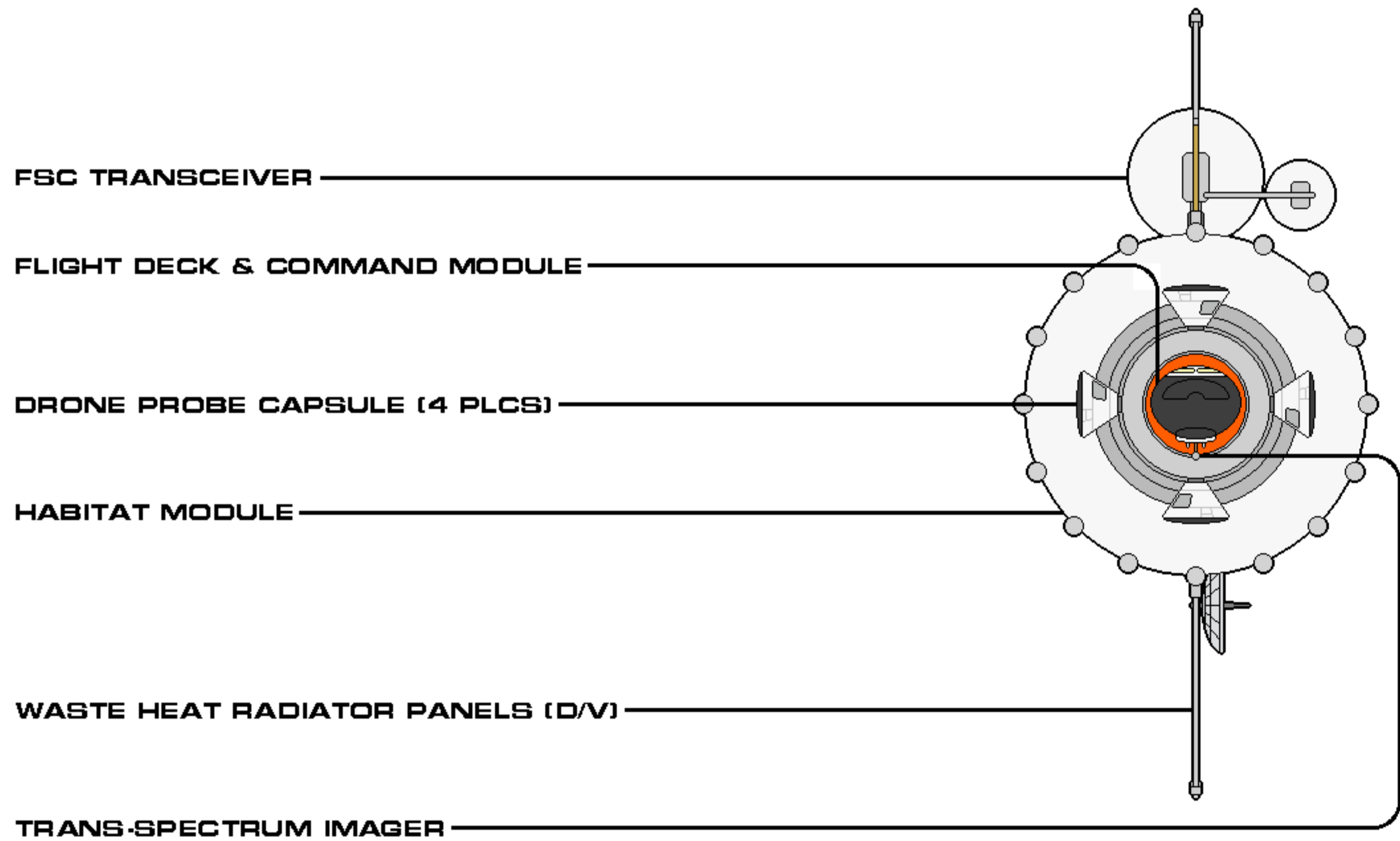
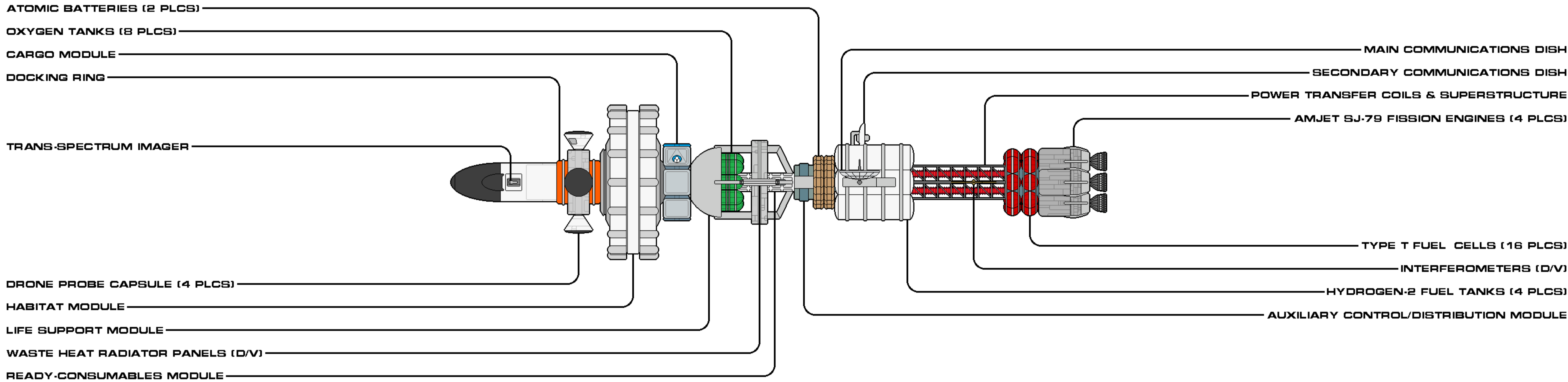
In late July that same year, NASA acknowledged that contact with Daedalus had been lost. When three days had gone by with no resolution, experts assured viewers that an algorithm had been written to address just such a technical error, and that Communications Specialist Moreno Raud



TAU ONE - DAEDALUS
GENERAL INFORMATION (CONTINUED)

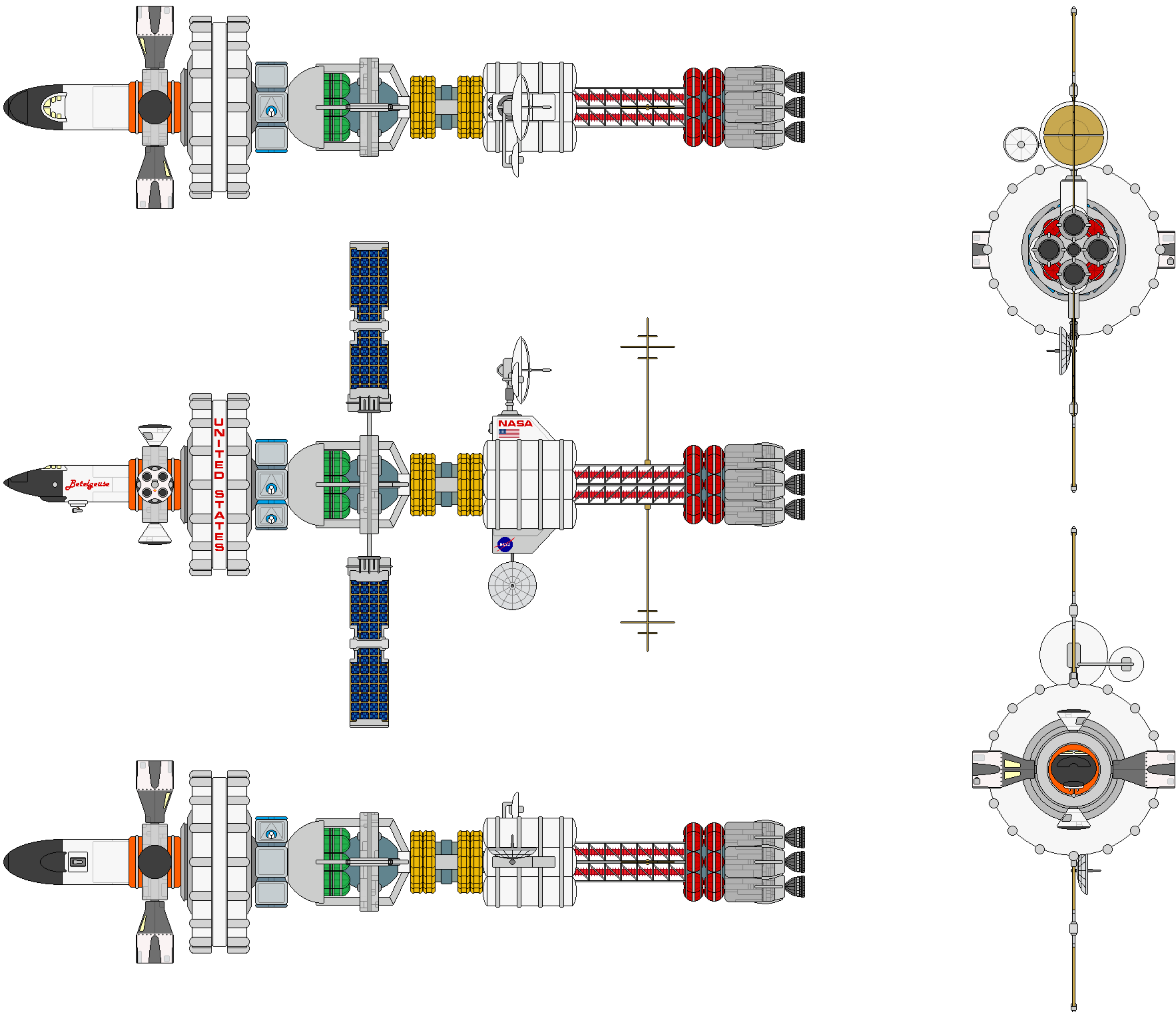
would be awoken to fix the problem. Weeks passed with no updates until NASA convened a press conference in late August with alarming news: space-based observations of TAU One's exhaust plume indicated the ship continued to burn well past the time for its flip and had visibly and dramatically accelerated, as its position was already past the initial Kuiper belt destination. Additionally, sudden and intermittent telemetry bursts from Daedalus revealed a series of onboard fires and subsystem failures, certainly accounting for the breakdown in automatic propulsion controls. No more data was received from Daedalus and space experts forecasted the day the craft most likely entered the far-flung and vast Oort Cloud. The vessel and her crew were declared lost, most likely destroyed.





SHEET 2 OF 2	
CLASS TAU	CATEGORY EXTRASOLAR EXPLORATION
VARIANT TAU ONE-DAEDALUS	CONSTRUCTED 2036
LENGTH 214.8 M	BEAM 50.3 M
HEIGHT 109.9 M	MASS 6,200 MT
OPERATIONAL 5	RELEASE DATE 2212.07
Authorized for release by Star Fleet Bureau of Starship Construction	

TAU TWO - BETELGEUZE



CATEGORY:	EXTRASOLAR EXPLORATION VESSEL		
OPERATIONAL:	2037 - 2043		
CONSTRUCTED:	1 (OUT OF SERIES OF 5)		
DIMENSIONS:			TACTICAL: N/A
LENGTH:	221.6 M		
BEAM:	50.3 M		
HEIGHT:	134.3 M		
MASS:	6,400 MT		
PERFORMANCE:			AUXILIARIES:
MAX:	0.2 C		- 2X DRONE PROBE CAPSULES
ENDURANCE:	6 YEARS (W/ CRYOSLEEP)		- 2X MODIFIED LANDERS
COMPLEMENT:			
CREW:	18		

GENERAL INFORMATION

All components for the TAU Two mission had been assembled at the orbital facility. The initial connections of all habitable modules were taking place when contact with Daedalus was first lost. Staging and assembly of Betelgeuze continued while the lost vessel's recovered telemetry was studied. When it was concluded that a massive charge buildup was the fatal cause, all progress was halted on the ship.

The engineering solutions were relatively simple: additional plasma contactor units (PCUs) were installed on the dorsal antenna base above the engineering section. These PCUs generated a slow, neutral plasma bath around the craft, multiplying the discharge field by a factor of three. Radiator panels were borrowed from a ground-based Ares static model and modified with embedded gold-based leads to channel environmental static discharges to grounding units located on either end of the panel and the mid-point. A toroidal tank-surrounding the ready-consumables module-



TAU TWO – BETELGEUZE
GENERAL INFORMATION (CONTINUED)

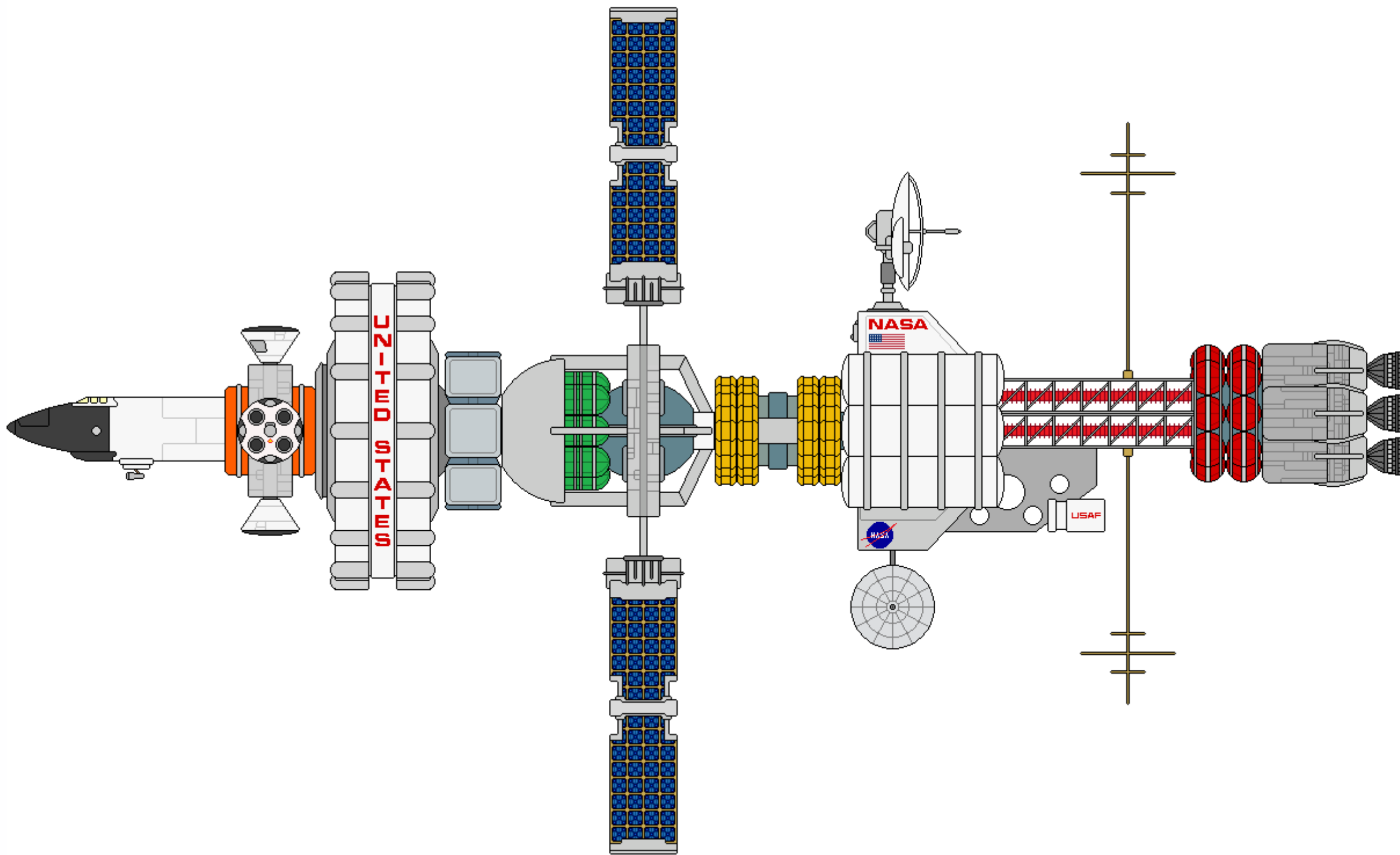
was added to treat, supply, and circulate the particular coolant that serviced the (otherwise) always scalding panels. Additional mission batteries joined the original set, with each enlarged slightly by rubber shielding encasing every cell and each of the cargo/hibernation pods were updated with better radiation shielding. The most significant change was the new mandate for two active members to be overseeing all ship's operations at every stage, ensuring a better response time to any emergent issues.

TAU Two proved to be a successful mission: all crew returned safely (proving new cryogenic enhancements along the way) from the six-year journey into interstellar space just beyond the heliopause with a plethora of new environmental data sets. The mission was intriguing for the many benchmarks set. A notable one, though far-surpassed by establishing the most distant recorded point any Human had yet (knowingly) ever traveled, was that none of the eighteen crew-members ever interacted with all of their crewmates during any operational part of the mission. Due to only waking those with the skill sets or experimental knowledge necessary for any given scheduled (or unscheduled) event, the most crew ever active at any one time was seven, during periods of turnover from waypoint transit to station-keeping observation points. The only times the entire crew were fully active as a complete team was during pre-mission training, pre-boost orbiting, and post-mission recovery.

In between TAUs Two and Three, there existed a brief consideration to shoehorn an additional mission in order to access Department of Defense funding via the Air Force Research Lab. The AFRL was exploring the idea of creating a system-wide positioning network (similar to the global navigation satellite systems servicing Earth) that would provide a quicker return than contemporaneous electronic star fixes. A proposal to place a test beacon out past the orbit of Neptune was presented to NASA, with the hefty device comprised of an extremely powerful transmitter and a bulky and barely-shielded atomic battery. While the launch timetable for the TAU program met the laboratory's aspirations, the particular craft assigned to deliver the beacon to its precise target would have to have its fore-to-aft architecture significantly altered in order to keep the cargo's hazardous nature as far removed from habitable spaces as possible. An initial computer model of a TAU ship was drafted that would carry the experimental beacon on a trailing release brace, but it required offsetting the thrust superstructure between the engineering and propulsion modules. This would have also impacted the hydrogen-2 tanks, reducing fuel capacity by 25% and range by over 30%.

The predominant arguments against the navigation proposal asserted that future computers would certainly perform faster at determining star fixes and that an artificial constellation of the required scale would both be exorbitantly expensive to install and face near-impossible technical challenges to maintain.

The program was canceled early in the design phase; an initial draft profile of the variant is shown below.



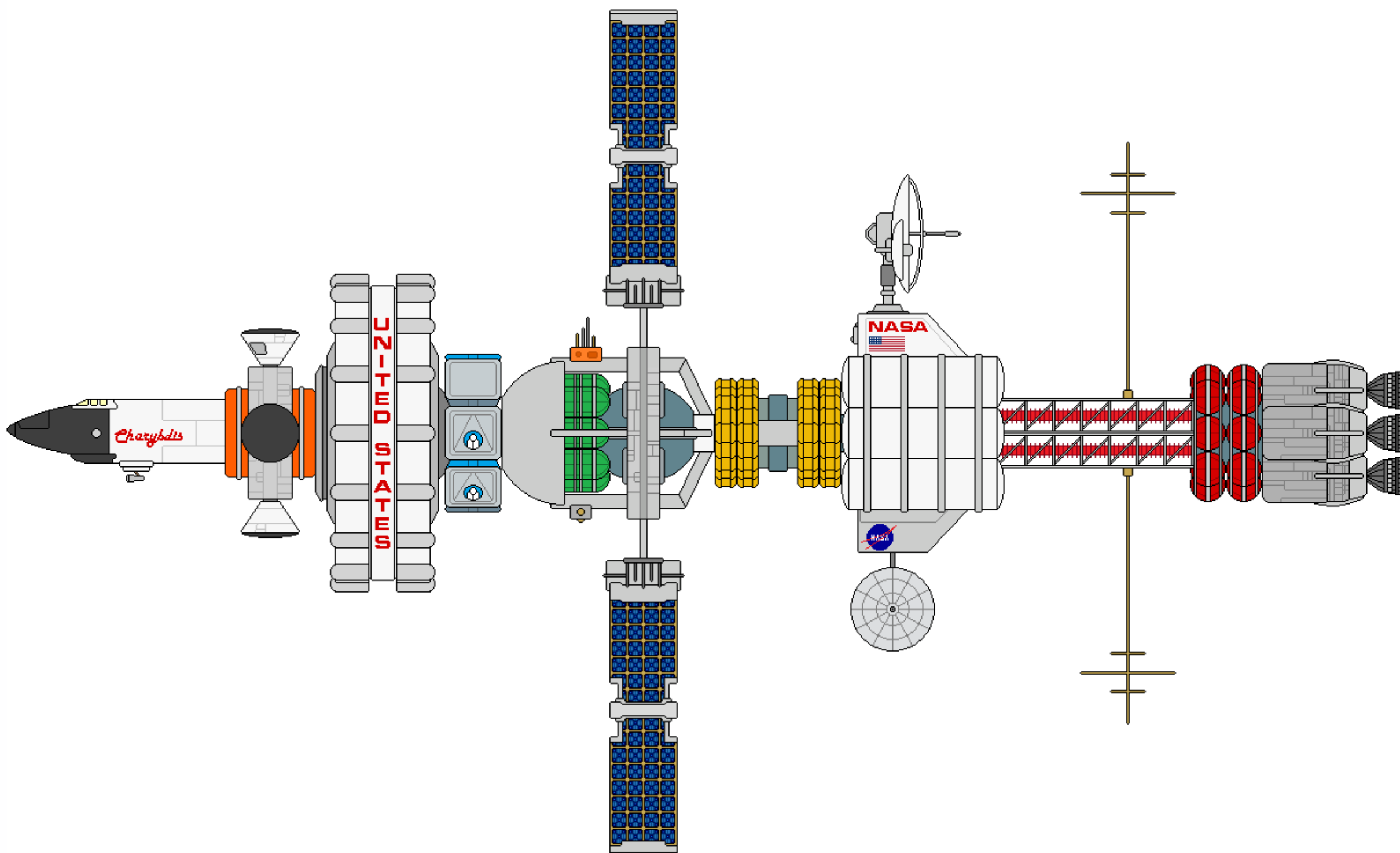
Abandoned AFRL mission design



TAU TWO – BETELGEUZE
GENERAL INFORMATION (CONTINUED)

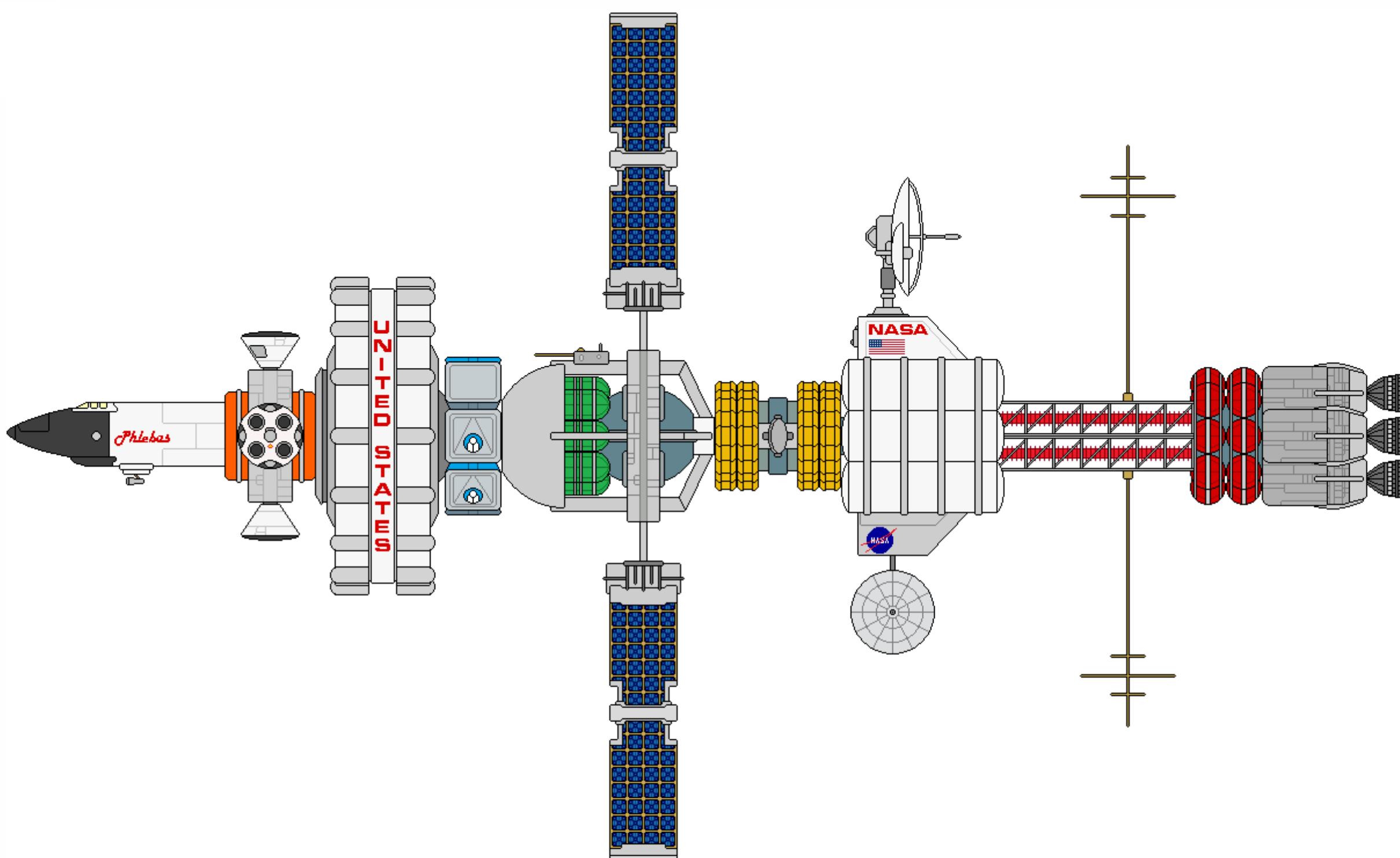
TAU Three—dubbed Charybdis—suffered an apparent similar fate as TAU One. Launching on July 23, 2037, under the command of Colonel Stephen Richey, the vessel transited for the heliopause along an angle of ten degrees above the ecliptic. Its secondary mission was to utilize the scientific packages attached to the mid-section support rails to search for signs of extraterrestrial civilizations, specifically the artificial ion trails left by alien ships utilizing comparable propulsion technology.

Instead, in early February of 2038, final telemetry received by NASA from the Charybdis indicated the fusion engine had burned to accelerate the ship to twelve times Solar Escape Velocity. The official report read: "Assumed vehicle was lost with consumables run out, 20% possibility of crew survival with hibernation systems at low usage mode." It was not until 2365, when a Klingon cruiser detected debris from the vessel in the upper atmosphere of Theta VIII, that any outcome for the mission was recorded. Col. Richey, the only known survivor, awoke from hibernation and found himself within a simulation of a locale from Hotel Royale, a novel he had brought along. In surviving logs, Richey hypothesized that an alien life-form created the simulation under the assumption the novel described what he considered to be the ideal world. He lived the remainder of his life in that limited environment. No other details as to how the Charybdis arrived at that location, nor about the alien culture behind the simulation, have ever been determined.



TAU THREE – CHARYBDIS

TAU Four (Phlebas) launched in December 2037 along a route seven degrees below the ecliptic. Two months later, it received orders from Mission Control to disengage its fusion thruster immediately and continue along its pre-determined route on the fission drives only. Mission Control then ordered the deployment of the ion detectors mounted on both sides of the auxiliary control module to track the Charybdis for as long as possible. Phlebas reported it was able to pinpoint Charybdis' ion plume to be well into the Oort Cloud before the plume suddenly vanished. TAU Four continued along with its initial mission through the heliopause, though fuel concerns necessitated its early return.



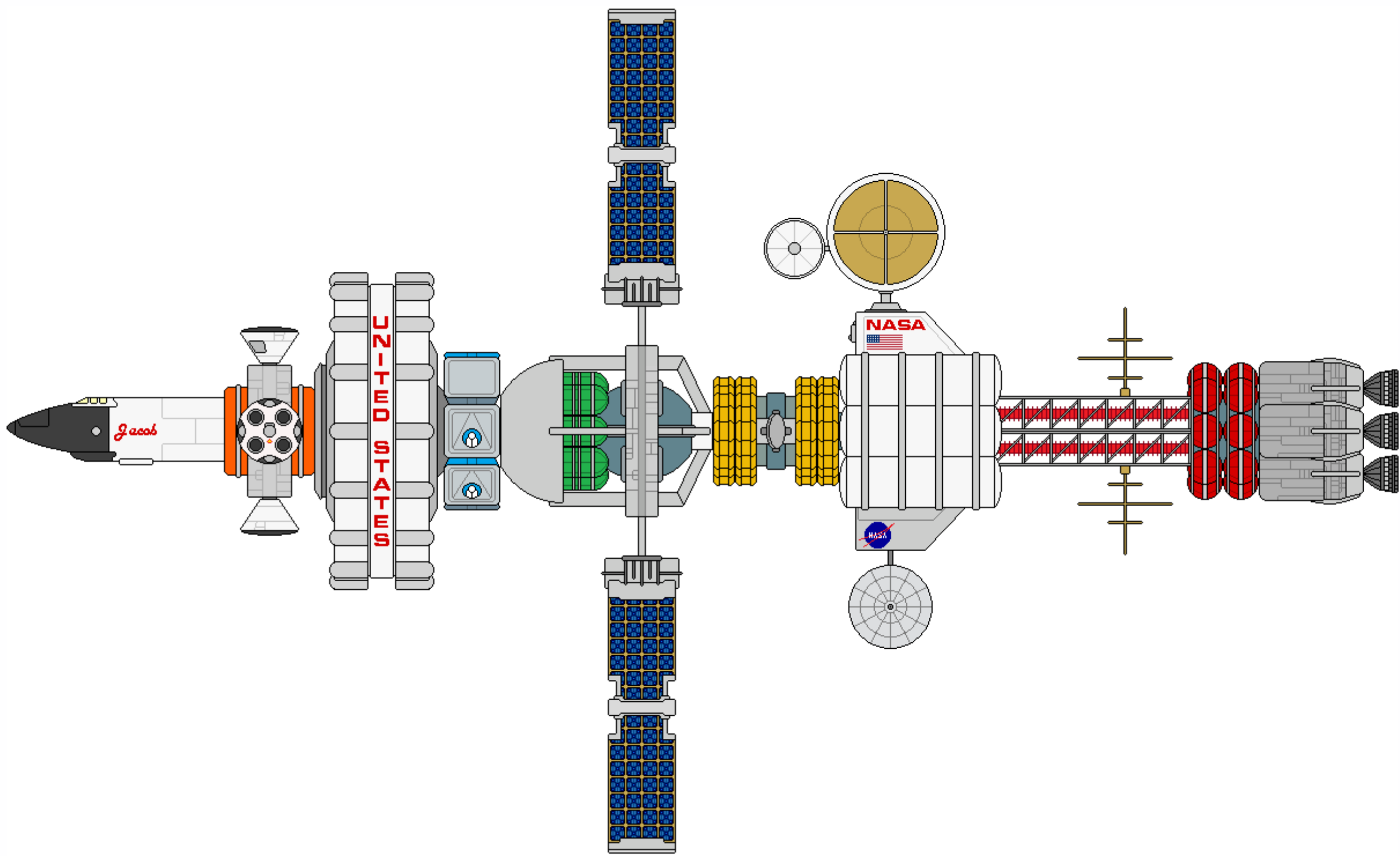
TAU FOUR – PHLEBAS



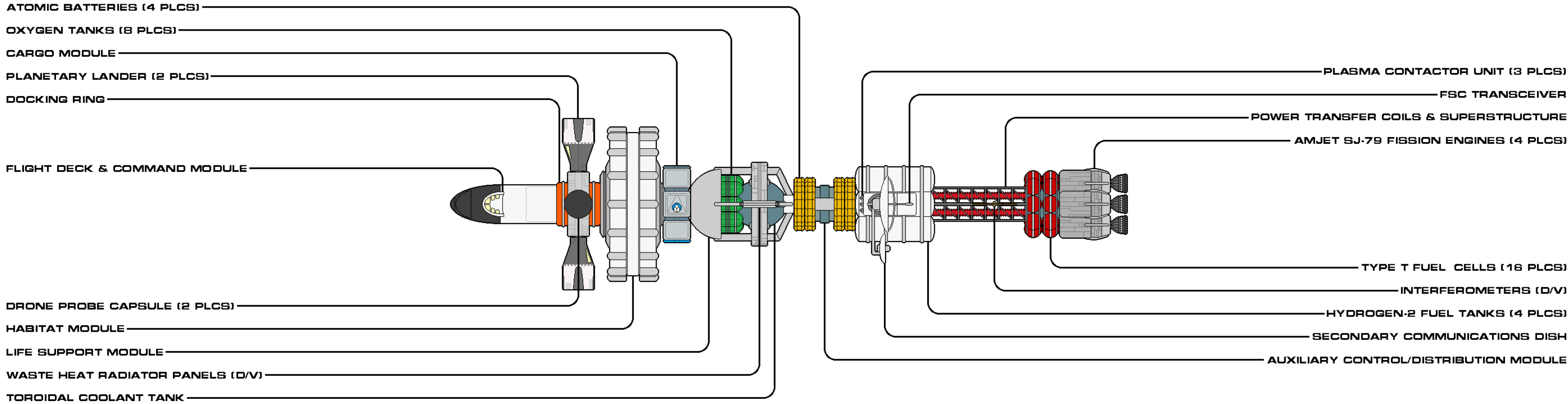
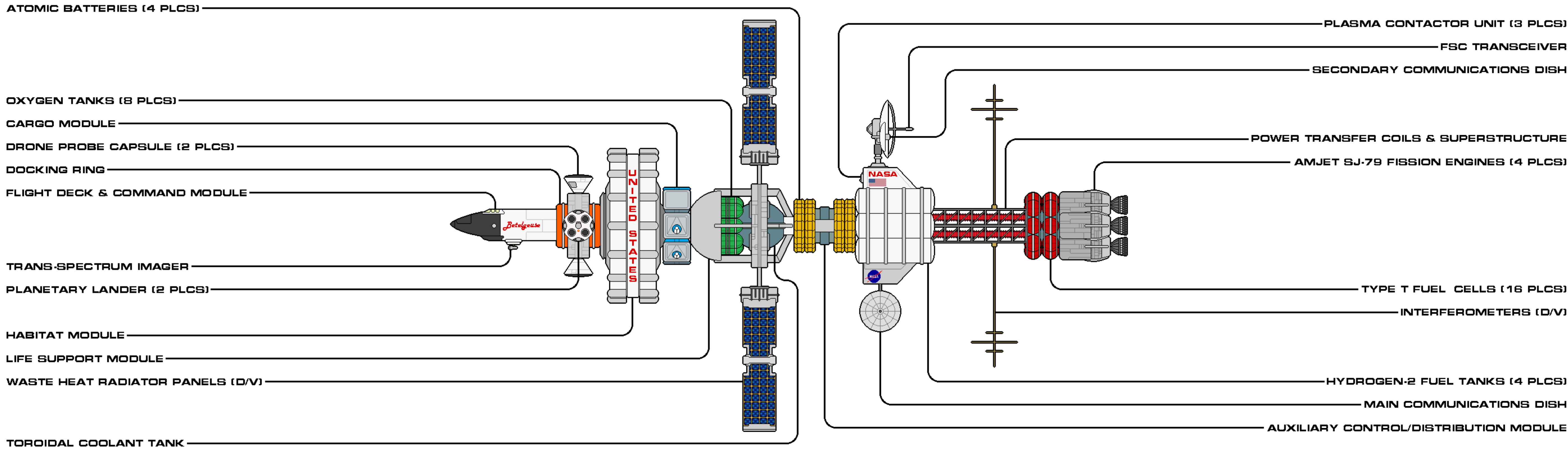
TAU TWO – BETELGEUZE
GENERAL INFORMATION (CONTINUED)

The fifth TAU vessel, the Jacob, had a delayed launch of August 2038 due to an extensive review of both the physical fusion propulsion system and every line of code that controlled it. The investigations led to significant improvements in both and revealed no intrinsic faults which could have resulted in the over-thrust incidents that led to the loss of TAUs One and Three. Faith in fusion technology slowly recovered, even though the mystery of the lost vessels remained unsolved. The original mission goal for TAU Five was changed to a route that followed the ill-fated Charybdis. After multiple stops to execute calibration deployments for the ion detectors, mission control decided that the point at which the trail was lost—approximately 27,000 AUs down-range—could only be explored at some future point by a far-more capable vessel.

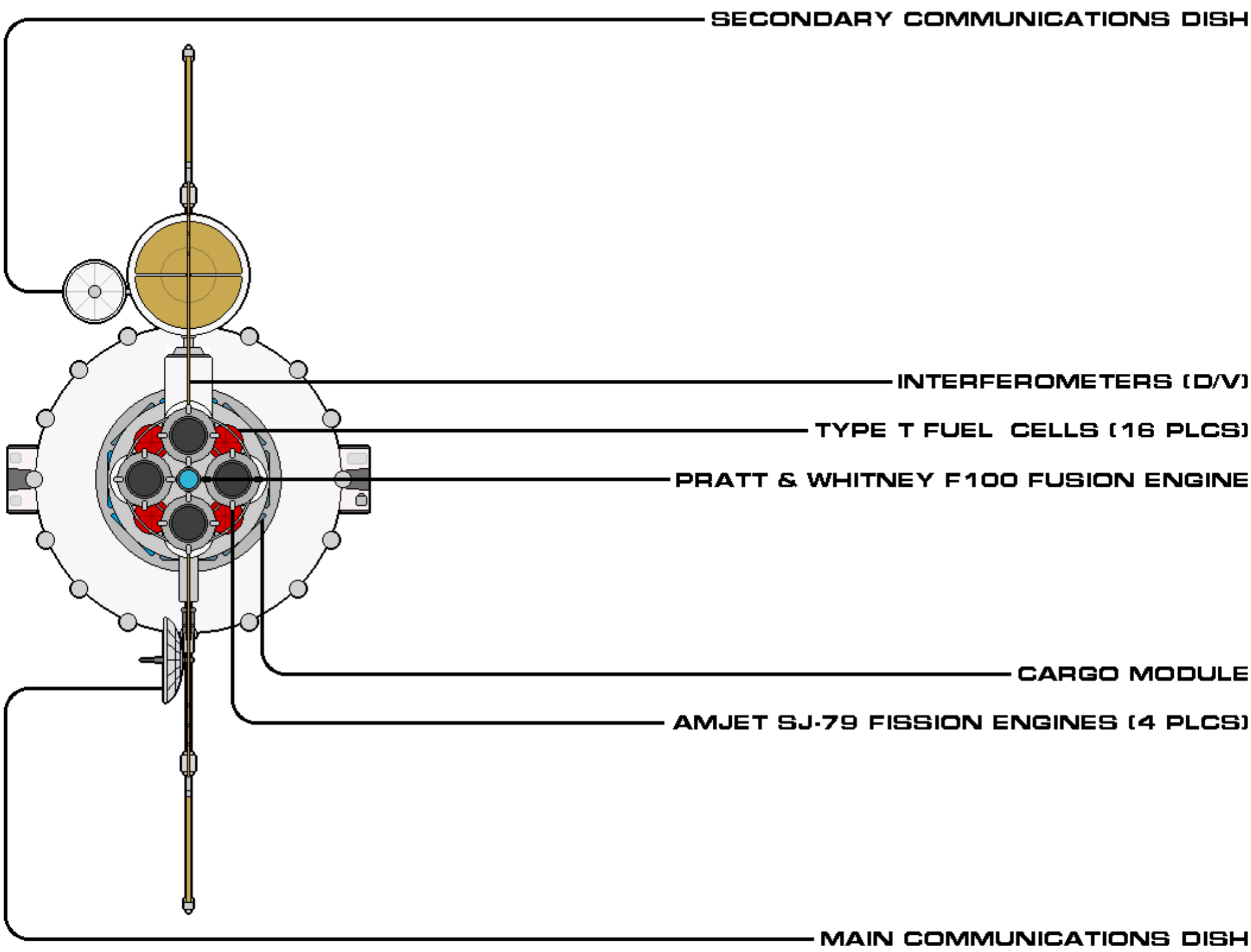
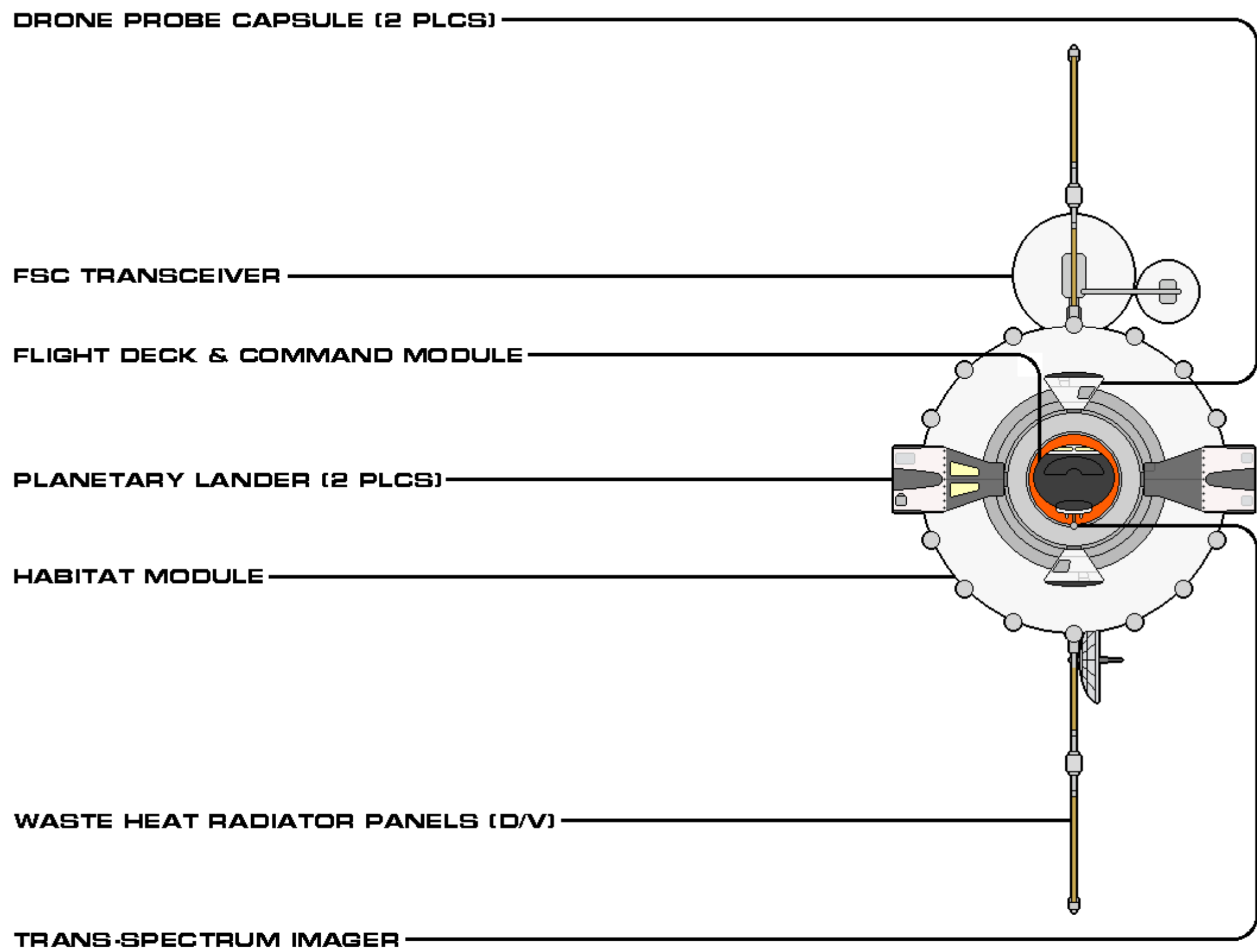
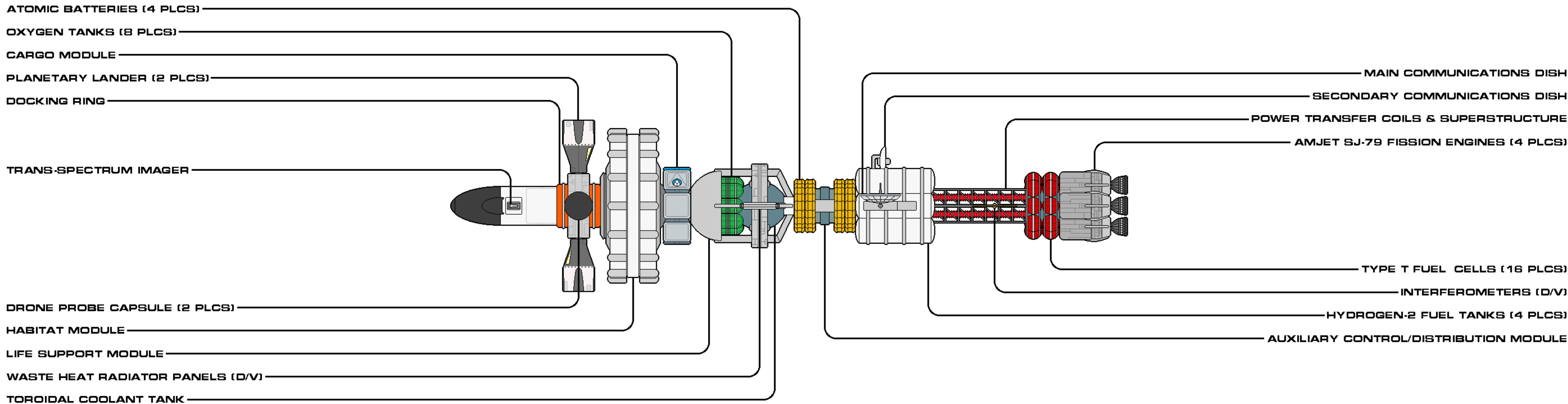
The Jacob was the only one of the series to take on additional missions: TAUs Six, Seven, and Eight. The last one launched in early 2063, returning to Earth in 2069, having traversed over 350 AUs from Sol and being passed on its return by outbound Earth warp vessels of five different designs.



TAU FIVE – JACOB



SHEET 1 OF 2	
CLASS TAU	CATEGORY EXTRASOLAR EXPLORATION
VARIANT TAU TWO-BETELGEUSE	CONSTRUCTED 2036
LENGTH 221.6 M	BEAM 50.3 M
HEIGHT 134.3 M	MASS 6,400 MT
OPERATIONAL 5	RELEASE DATE 2212.07
Authorized for release by Star Fleet Bureau of Starship Construction	



SHEET 2 OF 2	
CLASS TAU	CATEGORY EXTRASOLAR EXPLORATION
VARIANT TAU TWO-BETELGEUSE	CONSTRUCTED 2036
LENGTH 221.6 M	BEAM 50.3 M
HEIGHT 134.3 M	MASS 6,400 MT
OPERATIONAL 5	RELEASE DATE 2212.01
Authorized for release by Star Fleet Bureau of Starship Construction	



CLASS TIMELINE

TAU Timeline

2033

The secretary-general of the New United Nations exuberantly proclaims victory against the threat of the Swarm.

2035

The Central African States are formed from ten central nations.

2036

TAU One, the Daedalus, becomes the first manned vessel to attempt to leave the Sol system, when it launches for the heliopause.

After contact with the main computer of Daedalus is lost and a prolonged effort to re-establish it, intermittent telemetry indicates the presence of onboard fires and subsystem failures. Soon thereafter, the ship vanishes in the inner Oort cloud and is presumed destroyed.

2037

Following the lead of the Central African States, the nations in the northwestern part of the continent form the Northern African Alliance.

TAUs Two, Three, and Four all launch for the heliopause.

2038

Contact with TAU Three (Charybdis) is lost, following indications from telemetry that the spacecraft is at a velocity twelve times that necessary for solar escape. TAU Five (Jacob) launches along the same track, in order to discover might have happened.

2039

The Lewis and Clark returns to Earth from the Aventure I mission. The evidence of extra-terrestrial mining on Saturn's moons is released to select space-exploration nations.

2040

The UNSS Columbus, first in an intended series of interstellar sublight explorers, launches for Saturn on a test run.

The Mediterranean Alliance forms.

The Vegan Tyranny is destroyed, resulting in the extinction of the Vegans.

2041

The United States begins assembly of a new Space Station Freedom, which will monitor near-space for threats to Earth (and the US) and will have construction berths.

2043

TAU Two (Betelgeuze) returns to Earth.

2045

Analysis of interferometry telescoping and probe flybys confirm the existence of at least seven planets in the Alpha Centauri system, assuring the scientists that return propellant can be manufactured there and hinting at the presence of carbon-based life on the third and fourth planets of the system.

Of the extrasolar systems visited by Earth probes, four (and the Alpha Centauri system) are chosen for manned exploration. The five Columbus series spacecraft are readied.

2046

A serious accident during the fueling of UNSS Columbus leads to eight fatalities and damage to the spacecraft.

UNSS Nautilus hits an object in the inner Oort cloud, resulting in complete destruction within days. The three remaining transiting vessels of the Columbus series are considered to be inevitable losses as communications with each is lost to ion storms. The US defense department takes UNSS Columbus back from the ISA and begins adding armaments.

2047

After twenty-two years of hard work, the Venus Terraforming Project has progressed to the point where the first non-Augment manned base can be established at the planet's north pole.

2049

Dr. Zefram Cochrane is provided a sizable sample of the red coral crystal, ununennium, from the Christopher mission and realizes that it exhibits attributes of the (extremely) theoretical hypersonic series.

2051

Lee Kuan overthrows the emerging democratic movement within the government of the Eastern Coalition, cementing the ECON's hardline opposition-stance to the New United Nations' policies.

2052

During the final stages of the econo-technological race against the ECON, the US government begins construction on a large defensive space cruiser, tentatively christened the Seneca, in the Freedom Assembly Berth 02 drydock.

The New United Nations sides with the Western Alliance on legal use of oil fields in the South China Sea and Antarctica. The ECON secedes from the NUN in protest.

A series of confrontations between the New United Nations and the ECON begins over oil fields located in Antarctica and China.

2053

Columbus is destroyed by an ECON attack while in orbit.

The climax of World War Three is reached when the ECON strikes the NUN states with nuclear attacks, resulting in the deaths of an estimated 600 million. The First, Eighth, and Sixteenth Fleets under New United Nations command carry front-line troops into the Bay of Bengal and the ECON launches a massive invasion of the North American continent, sending troops and military aircraft southward through Canada. Targets in New England, Minnesota, the Rocky Mountains, and the Midwest are hit hard by ECON forces, the U.S. military's defenses along the Canadian border utterly failing.



CLASS TIMELINE

The United States Air Force and Army both fight back against the invaders, losing many fighters and ground soldiers to the opposition.

Certain military units are abandoned in enemy territory during the war, including a New United Nations brigade under the command of Colonel William Green in Kashmiristan. Finally, the Eastern Coalition's governing palace is destroyed by American forces, killing ECON general Lee Kuan. In light of the excess damage of the world war, the New United Nations collapses. The state of Texas secedes from the United States.

The United States takes administrative control of the International Space Agency.

The Siege of Las Vegas rages, with American forces battling Eastern Coalition troops for control of the city; the ECON eventually proves victorious. During fighting in Paris, the Eiffel Tower is destroyed. Additional combat takes place in San Francisco, resulting in the destruction of the Coit Tower, among many others.

The main laboratory at Kashishowa Research Station literally disappears from the surface of Luna, taking most of the station with it and leaving behind a perfectly smooth crater 18 meters in diameter. This event appears to have resulted from an overload due to a warp drive experiment.

The global war concludes when several of Earth's governments meet in San Francisco to declare a cease-fire.

2054
Colonel Green surprises the surviving United States government by turning up in Alaska at the head of a massive army comprised of both NUN and ECON soldiers. President Mendoza orders Green to stand down, but is refused; Green slaughters his way across the continent, culling the "weak" and "impure" and those afflicted with radiation-sickness from humanity's gene pool, killing millions.

Inspired in part by what will become the Conestoga project (or the Great Experiment), New Berlin colony is established on Luna and multiple mining colonies within the asteroid belt are set up and begin sending necessary resources.

The Australian Space Defense (ASD) is founded from the large number of ground-based ISA command and control assets located in that country. The newly-sovereign nation of Texas forms the Texan Aeronautics and Space Agency (TASA) from its co-located NASA assets.

2055
The United States Air Force cancels plans for the launch of its WD-1, a faster-than-light test vehicle.

The Eastern Coalition formally becomes one nation, subsuming the member states into political regions and retreating within the

haphazard recovery processes that define the era known as the Post-Atomic Horror.

The final edition of the Treaty of San Francisco, formalizing the end of World War III, is signed.

Copernicus City is founded on Luna.

The Vulcans initiate First Contact with the Trill. While limited contact with the Vulcans continues, the Trill government declares contact with other alien species to be forbidden.

2056
Colonel Green attempts to gather further strength for his eugenics campaign by giving an impassioned speech calling for the impure to once again be purged from society. Shortly thereafter, he meets his demise in Montana from an orbital strike.

2058
In cooperation with Zefram Cochrane at Earth Station Bozeman, the O'Neil colonies participate in a test to generate a stable subspace field. However, due to an unknown error during the test, all six colonies vanish and are presumed destroyed.

2060
UNSS Prometheus arrives in the Epsilon Indi system.

2061
Zefram Cochrane tests the first continuum distortion unit inside an underground Titan V/VI assembly hangar, and is able to accelerate a test payload to lightspeed.

UNSS Hector arrives in the Arcturus system.

2062
The Fundamental Declarations of the Martian Colonies are issued. As the nations of Earth peacefully accept Mars' independence, this document will be considered one of the most important and historic documents in the Federation.

2063
Zefram Cochrane tests the Phoenix, demonstrating warp drive by achieving Warp 1 for approximately one minute in the Sol system. A passing Vulcan ship, the T'Plana-Hath, detects the warp signature and lands in Bozeman later that evening, officially making first contact with Humans.

Zefram Cochrane releases all documents on his warp technology into the public domain.

Four new Liberty hulls are launched to orbit for installation of systems, in a desperate bid to show teeth in front of the Vulcan expeditions.

2064
Two of the four ECON Akademik Mstislav Keldysh class cruisers are ordered rapidly modified for interstellar explorations missions.

Survey cruisers SS Defiant and SS Valiant are sent out on twenty-year missions to find the



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limits of human reach with the new drive. Sending back reports on radio waves only, the ships quickly disappear into the galactic void, from Earth's point of view.

2065

The first official diplomatic expedition from Vulcan arrives on Earth and influences talks resulting in the Sparon-DeSoto treaty, that forces the national militaries to crew their armed spacecraft with international members. This results in the Liberty class ships transferring from United States Air Force control to that of the International Space Agency.

The infrastructure to build warp engines is being erected at a breakneck pace, revitalizing transportation and communication and totally relocating the industry in a way that makes many former political boundaries meaningless.

The New United Nations is resurrected, in accordance with the Sparon-DeSoto treaty. The Earth Cargo Authority is one of its first established departments.

The Bonaventure launches on a three-month shakedown cruise outside the Sol system.

The SS Defiant is destroyed in a region of space later found to be claimed by the Barrier Alliance.

UNSS Icarus arrives in the Alpha Centauri system, extends her sensor gear, and is hit by radio-frequency broadcasts, low enough in power not to be discernible outside the systems' ionization bubbles but still undoubtedly marks of advanced civilizations. A first contact report is radioed back to Earth.

2066

Bonaventure launches for Tau Ceti, under the command of Captain Hadrian Huckleby.

Tycho City is founded on Luna.

UNSS Icarus departs the Alpha Centauri system for a return to Earth.

2067

The Conestoga launches for Eta Cassiopeiae III, Earth's first intended colony.

The NUN forms the United Earth Space Probe Agency (UESPA), to help coordinate and develop human presence in interstellar space.

Argelius II has its "Great Awakening" with the abolishment of planetary war.

Ambassador Solkar indicates Vulcan will only provide access to advanced technology, medicine, galactic information, and trade via negotiations "with one voice", in order to prevent "nationalistic competitions".

2068

The Trade Council of Earth—the first truly unified "voice" of the planet—is formed, in order to take advantage of increased technology access from the Vulcans (who required a single

point of contact for negotiating with Humans).

2069

The last of the TAU series of vessels (Jacob) returns to Earth and is retired.

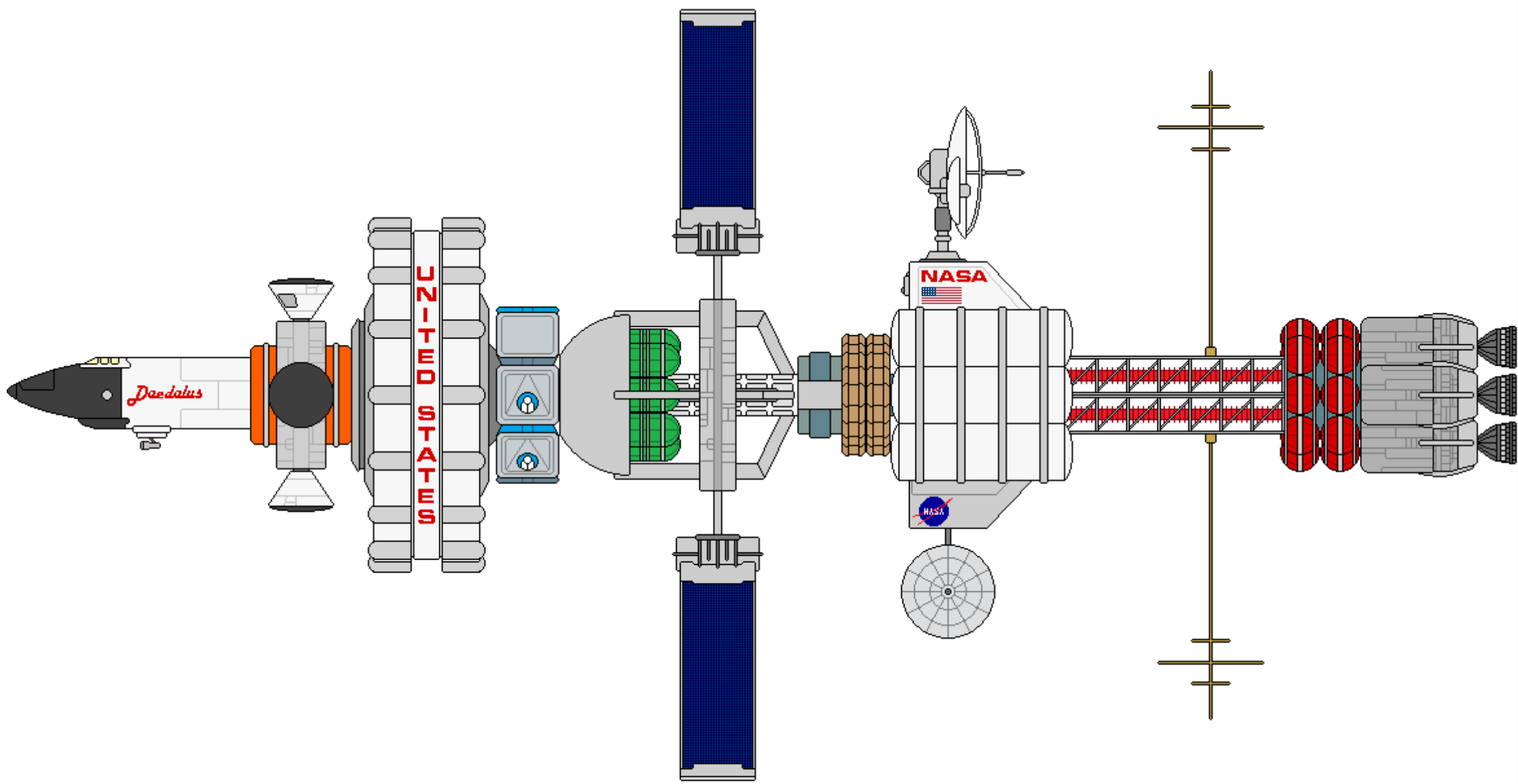
The Utopia Planitia Base (predecessor to the Utopia Planitia Fleet Yards) is founded, due to the relative success of the New Berlin colony on Luna.

Current members of the NUN agree to the United Earth Defense Pact, a promise to put Earth's ascendancy and safety ahead of national goals.

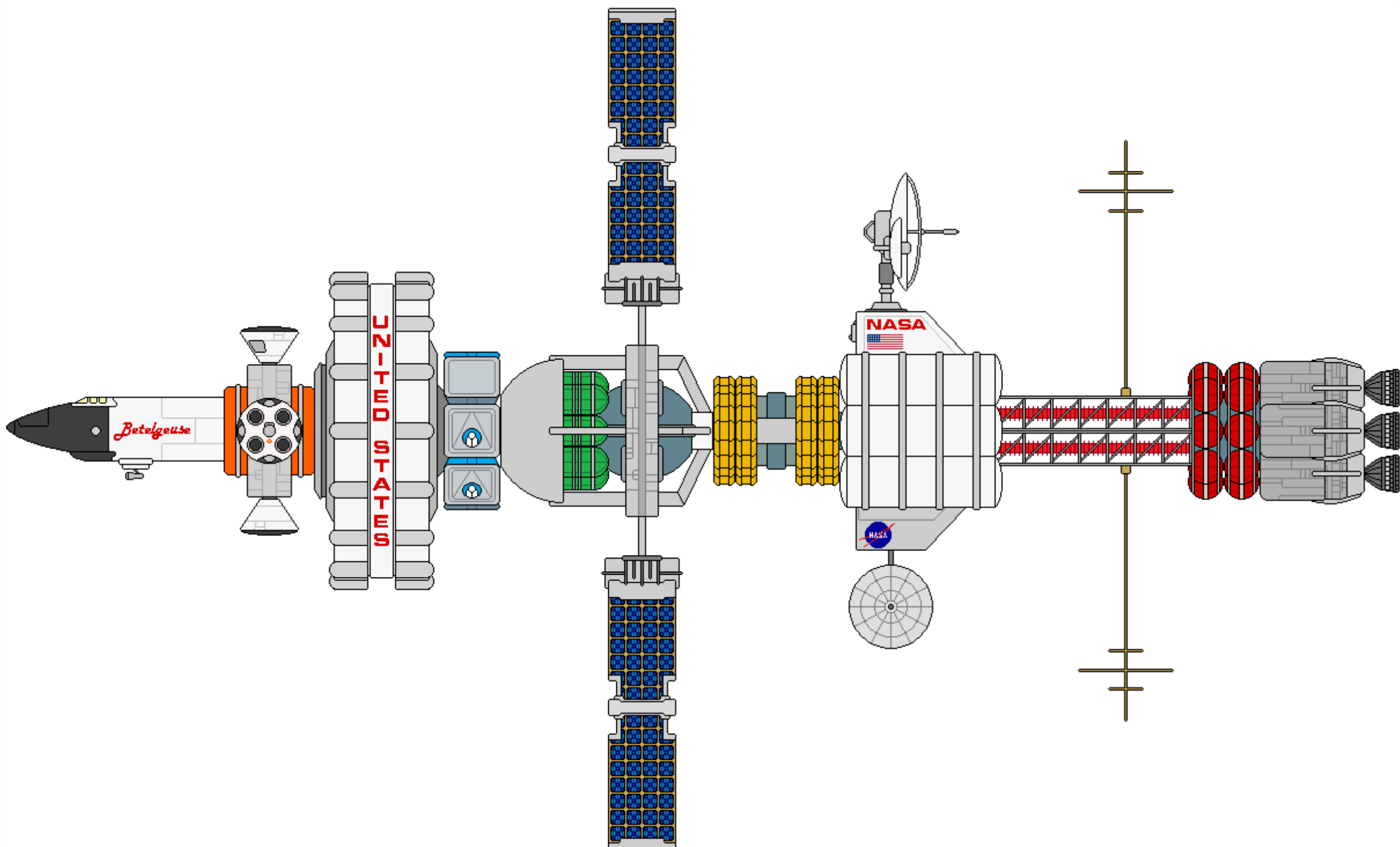
The United Earth Stellar Navy (UESN) is formed from the split of the International Space Agency into two parts (the second being the United Earth Space Probe Agency). UESN ships are re-designated as UES (for United Earth Ship). The United States turns over all NASA and ISA operations to UESPA and the space forces of the USAF to the UESN. Following negotiations with the NUN, the ASD and TASA space agencies turn over all militarized space vessels, as well as command and control assets, to the UESN in exchange for a number of aging mining ships.

UESN Tycho Base is commissioned (in Tycho City).

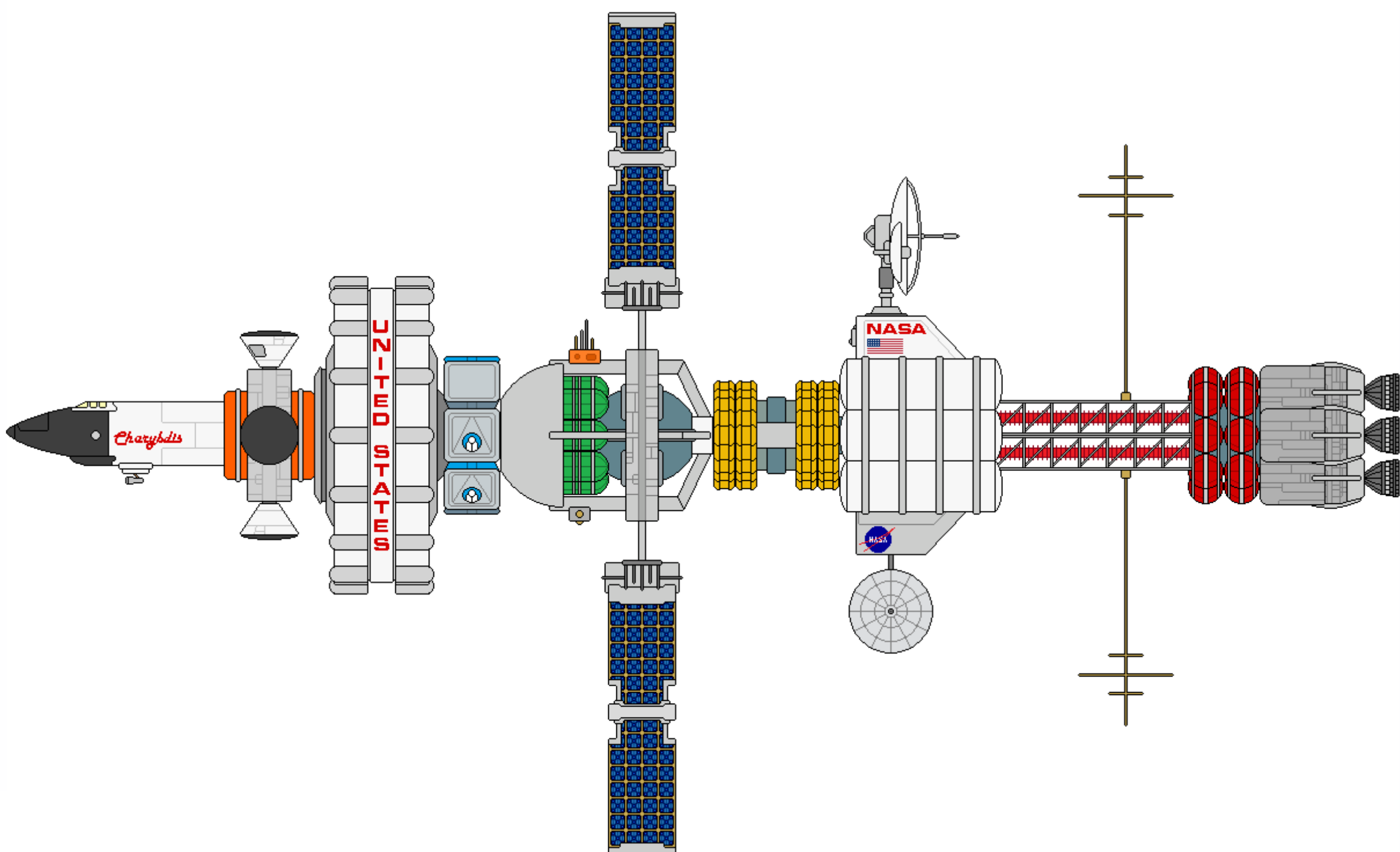
STARSHIP COMPARISON GUIDE



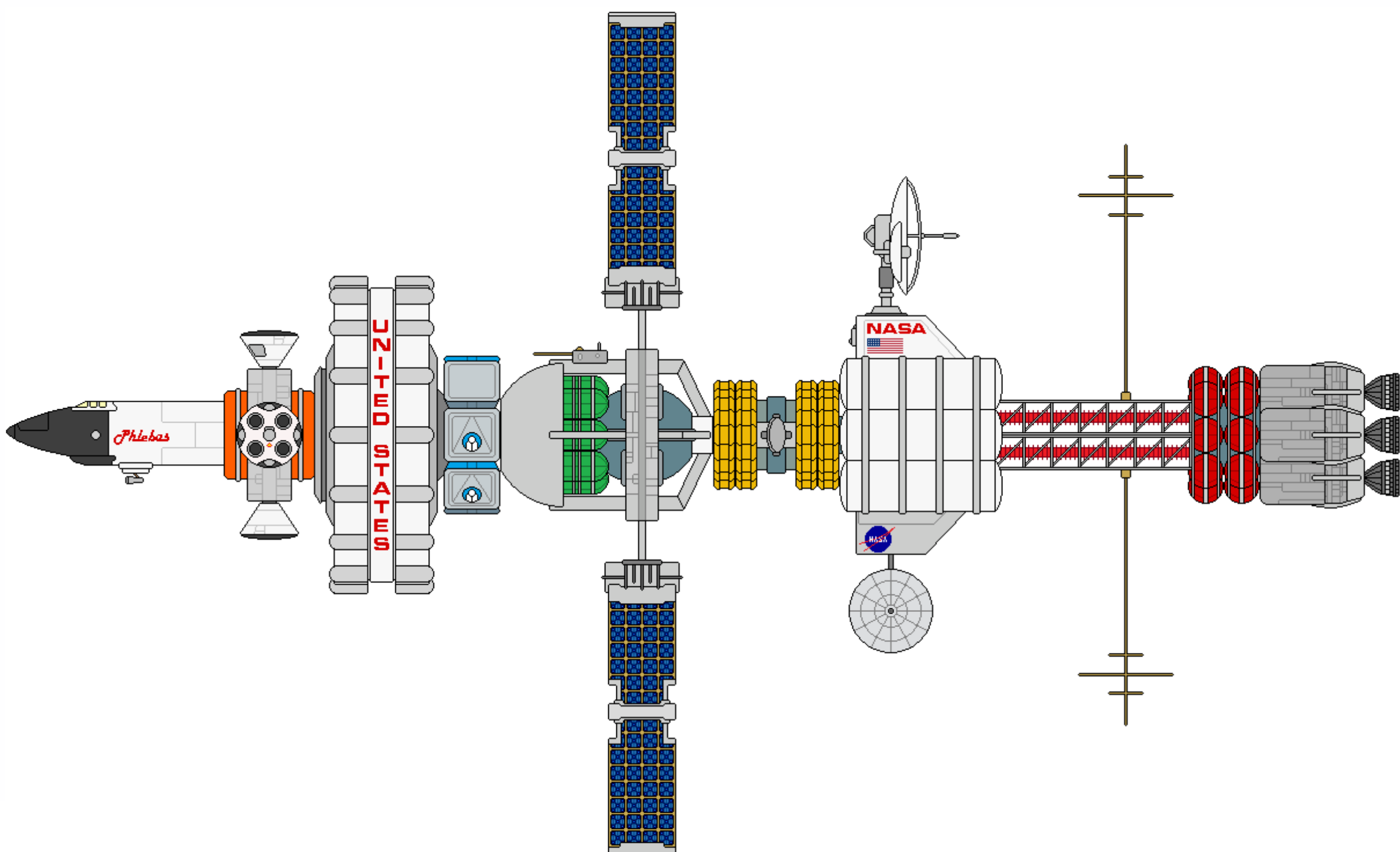
TAU ONE - DAEDALUS



TAU TWO - BETELGEUZE



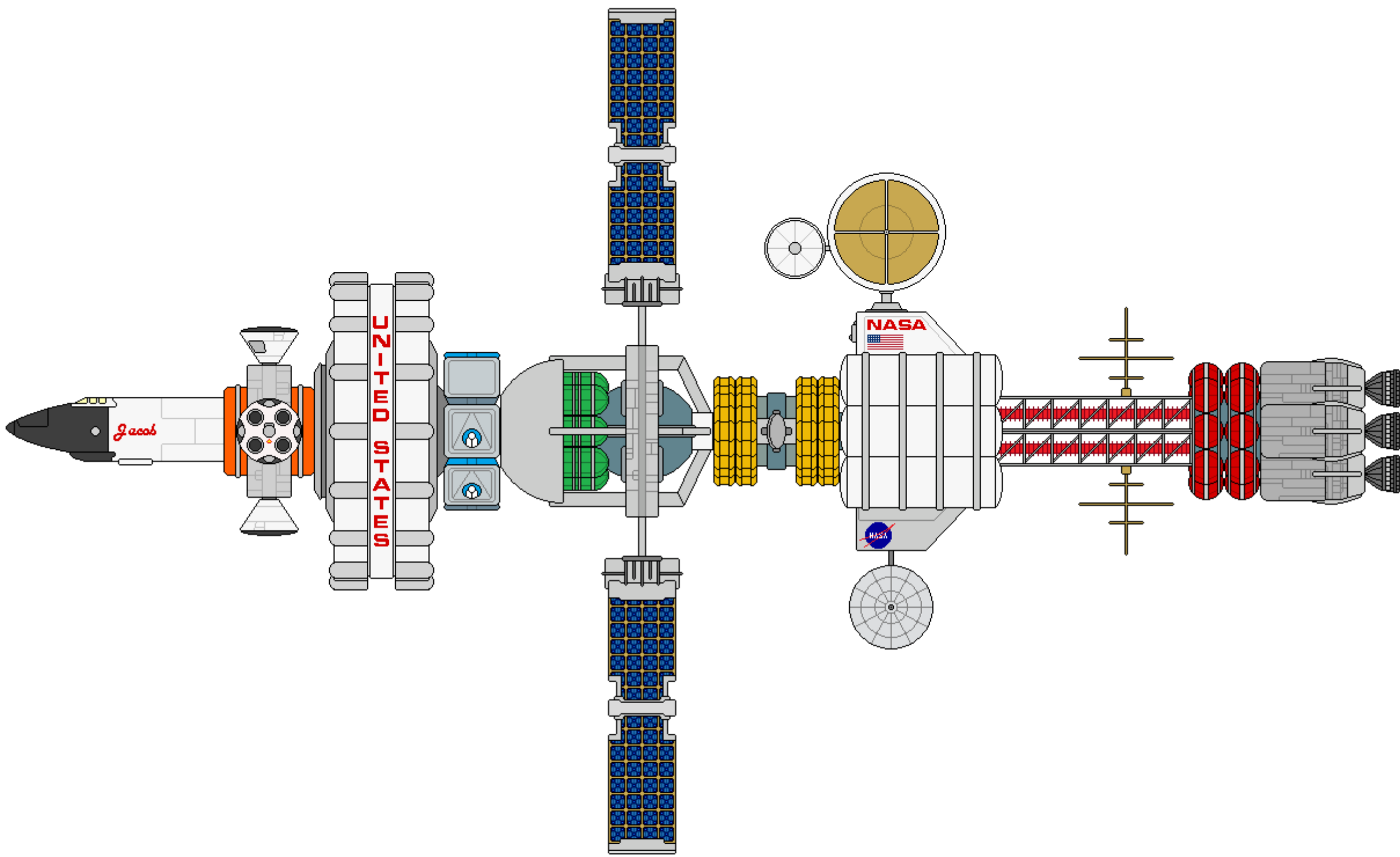
TAU THREE - CHARYBDIS



TAU FOUR - PHLEBAS



STARSHIP COMPARISON GUIDE



TAU FIVE - JACOB



GLOSSARY

Array: Generally, a combination of identical sensors, weapons, or other equipment operating in conjunction.

Augment: A type of Human genetically modified before birth (originally) in the mid-20th century.

Auxiliary: a common name for small craft embarked aboard and utilized by starships for various tasks. Craft types include work pod, shuttlepod, shuttle, plus various tactical craft and other special-purpose craft.

C/P/S: Centerline/Port/Starboard (see P/S).

Canada: an important pre-Unification state on Earth; it was a core member of the Western Alliance.

China: On Earth, a powerful pre-Unification state; joined the Eastern Coalition (ECON) in 2031, and formally absorbed in 2055.

CNSA: China National Space Administration, the official launch agency for the pre-Unification state of China on Earth.

Deep space: The region near or beyond the recognized borders of the Federation, often uncharted in any considerable detail.

Deimos: one of two natural satellites of the planet Mars.

Delhi: a territory of the pre-Unification state of India on Earth.

Deuterium: hydrogen-2, or heavy hydrogen; an isotope of hydrogen often used as one of the primary ingredients for fuel in matter-antimatter reactors (the other being antideuterium).

D-Y: Dinyan-Yoyodyne Conglomerate, a pre-Eugenics War technology and industry sector corporation on Earth that served as the Great Khanate's agent in plans for planetary domination. Collapsed into smaller, disparate companies in 1996.

EC: Eurasian Confederation, a large pre-Unification nation-state on Earth, formed from the smaller states of Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan and Uzbekistan in 1996. It was absorbed into the Eastern Coalition (ECON) in 2031, formally so in 2055.

ECSA: Eurasian Confederation Space Agency; formed in 1996 from the constituent agencies and absorbed into the ECSN in 2031.

ECSN: Eastern Coalition Space Navy; formed in 2031 from the alliance's constituent agencies.

ELRS: Extreme Long Range Sensor

EmDrive: A theoretical technology that sought to achieve greater power efficiency for thrusters via the use of microwave resonance waves inside a mostly-empty chamber.

ESA: European Space Agency, an intergovernmental space exploration organization of 22 European member states on pre-Unification Earth.

Eugenics Wars: a late 20th century global conflict on Earth in which the Augments established themselves as super men and attempted world domination.

FSC: fine-structure constant; a fundamental physical constant which quantifies the strength of the electromagnetic interaction between elementary charged particles.

Great Khanate: an historical designation for the tight but self-contentious organization of Augments that sought to dominate Earth in the late 20th century, culminating in their defeat in the Eugenics Wars.

GW: GigaWatt

Heliopause: the boundary where a star's stellar wind is stopped by the interstellar medium.

HEO: High Earth Orbit; a geocentric orbit with an altitude higher than 35,800 kilometers. In the modern idiom, High Planetary Orbit (HPO) is above that of the geosynchronous orbital range, with orbital periods greater than that of the rotation of the planet in question.

India: an important pre-Unification state; subsumed into the Eastern Coalition (ECON) in 2055.

IRC: ISA Rescue (or Regulatory) Cutter. Ship prefix for the names of vessels of the International Space Agency.



GLOSSARY

ISA: International Space Agency, a NUN agency on pre-Unification Earth, formed in 2018 and serving as a conduit for peaceful and cooperative space activities by the major space-capable nations, and later for most space activities of any entity, including corporations, organizations, and private individuals. Succeeded by both the UESPA and UESN in 2067 and 2069, respectively.

ISRO: Indian Space Research Organization, the national space agency for the pre-Unification state of India on Earth.

KARI: Korea Aerospace Research Institute, the national space agency for the pre-Unification state of South Korea on Earth; transitioned into the PRKS in 2003.

Korea: formally the Royal Republic of Korea on Earth, a 2003 (pre-Unification) merger of the prominent nation of South Korea and the xenophobic and developmentally-devastated state of North Korea.

L-5 Colonies: while not comprising all installations located at Earth's L-5, the six Swarm asteroids captured in the period of 2031-2033 were usually identified by this name; they comprised Brynner Asteroid, Colony Roykirk, Moss-Offenhouse Colony, the NicholCorp Facility, Starling Habitat, and Vanguard Colony.

LaGrange Point: five positions in space where a body of negligible mass would maintain its position relative to two existing massive bodies; these are referred to in abbreviated forms as L-1 through L-5.

Laser: Typically, a secondary weapon on early space vessels. Current shielding technology has largely negated the threat posed by the coherent electromagnetic beam.

LEO: Low Earth Orbit; an altitude of 2,000 kilometers or less. In the modern idiom, Low Planetary Orbit (LPO) is approximately one-third or less of the radius of the planet in question, in altitude.

LIDAR: Acronym for Light Detection And Ranging; a sensor that uses laser pulses to calculate the size, speed, and distance of an object.

Lunar: of or relating to Luna (see Moon).

M: Meters

Main Belt: the designation for the Sol system's major asteroid belt.

M/AM: Matter / Antimatter

Mars: the fourth planet in the Sol system.

Mission spacecraft: a catch-all category for governmental spacecraft, though usually non-military, that operate independently and perform certain functions, such as search & rescue or regulatory enforcement.

Moon: the pre-colonization name for Luna, the sole natural satellite of Earth.

MT: Metric Tons

NASA: National Aeronautics and Space Administration, an independent agency of the United States government responsible for the civilian space program, as well as aeronautics and space research.

Navigation Light: Yellow in color, these lights are generally located on or near major points of superstructure of a space vessel. They often provide low-emission positioning signals for specific locations on and within the vessel for the purposes of proximity maneuvering by another vessel and relative destination positions for transporters. Not to be confused with red or green running lights.

NTR: nuclear thermal rocketry

NUN: New United Nations. Formed in 2011, first dissolved in 2053 (during the Third World War), re-formed in 2065 (two years following First Contact), then finally dissolved in 2079. Authorized the formation of the ISA (2018), UESPA (2067), UEDP and UESN (both 2069). Succeeded by the UEDP.

Oceania: On Earth, a distinct geographic region spanning the eastern and western hemispheres of the northern and southern Pacific Ocean.



GLOSSARY

P/S: Port/Starboard; left & right side, respectively, in naval parlance.

PCU: plasma contactor unit; device used to disperse the electrical charge that builds up by providing an electrically conductive "ground path" via the generated plasma environment surrounding the vessel.

Phobos: one of two natural satellites of the planet Mars.

RCS: reaction control system; a spacecraft system that uses thrusters to provide attitude and station-keeping control (and sometimes propulsion).

RRKS: Royal Republic of Korea Spaceforce, the new nation's space and regulatory agency. Merged with other international agencies to form the ECSN in 2031.

Running Light: Red (port/left) and green (starboard/right) lights traditionally denoting the observed side of a water vessel under low light conditions. Utilized for similar purposes by space vessels of the UFP, though generally for rapid orientation by the pilots/helms of other vessels maneuvering in close proximity. Not to be confused with yellow navigation lights.

Russia: an important pre-Unification state on Earth; it merged with six other states in 1996 to form the Eurasian Confederation (EC).

Shore power: the provision of electrical power to a ship at berth while its main and auxiliary engines are shut down; often provided by a station.

South Korea: an important pre-Unification state on Earth; it merged with the smaller, xenophobic and developmentally-devastated state of North Korea to form the Royal Republic of Korea in 2003.

South Pacific Ocean Uninhabited Area: a spacecraft "cemetery" on Earth, a target in pre-Unification times for spacecraft that had reached the end of usefulness and destroyed by de-orbiting.

Subclass: A significant variant of a given class of ship, usually newbuilds, though sometimes including important modifications to existing ships, that are not intended to replace the existing ships of the original class. Often named for the first ship to reach that final intended production standard.

Swarm: An existential crisis to the planet Earth, wherein 17 metropolis-sized and attendant "flocks" of medium-sized asteroids threatened to impact the surface between the years of 2031 and 2033; a planet-wide effort diverted all of the planetesimals.

Transport: A Starship or other vessel dedicated to transporting passengers or cargo. They range in size from small two- or three-crew ships to huge starships and freighters.

Trans-spectral Imager: A sensor that compares changes in perceived light to help determine the platform's location, as well as distance and aspect of a target.

TW: TerraWatt

United States: On Earth, a powerful pre-Unification nation. An original signatory to the Traité d'Unification, which established the United Earth government in 2130.

USAF: United States Air Force, the aerial and space warfare branch of the armed forces of the pre-Unification nation of the United States on Earth.

USNS: United Survey and Navigation Ship. Prefix for joint missions of the ISA & NASA.

Venus: the second planet in the Sol system.

Western Alliance: Originally a NATO agency to oversee the 2002 pre-Unification economic and defensive agreement between Earth's United States and European Union, it became a major force for the coordination response to the Swarm incident of 2026 and a competitor to the rival Eastern Coalition.

Work Pod: The general name for manned, sub-impulse craft used for construction, maintenance, repair, and other service tasks in space. A variety of external tools and modules are attached to the work pods to facilitate a multitude of tasks.

YPS: Yoyodyne Propulsion Systems, an offshoot and surviving entity of the post-Eugenics Wars Dinyan-Yoyodyne Conglomerate on Earth; most associated with the United States and Korean nations, as well as the Western Alliance.



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