JUMP POINT

ISSUE: 09 03

FROM THE COCKPIT

GREETINGS, CITIZENS!

Here's a shocking number for you: you presently hold in your (virtual) hands the 100th issue of **Jump Point**! It's hard to believe but we've been putting out new issues each month since December 2012. My mind can't help but go back to that very first issue. We'd just set up the first office in Austin with perhaps half a dozen employees and little more than secondhand card tables for our work machines. We spent the month getting things organizing with the intent to go hard as soon as the holidays were over in January. Then, with about a week until the break to go, Chris Roberts reminded us that we'd promised all our new subscribers an "8-10 page newsletter" each month and they'd already paid for the first one! Well, we pulled out all the stops. I wrote about my experiences in the 24-hour livestream and collected the first ever art of the Origin 300i, while Dave Haddock wrote the first part of an original *Star Citizen* serial in no time flat… but what we didn't have yet was an in-house artist! After an embarrassing attempt to do the layout ourselves, Chris turned to the great David Ladyman, who put together the original issue and established a style we kept for the first four years. You can take a look back at that first issue in your subscription area today… it's funny how what seemed cutting-edge at the time now feels like we were working with stone knives and bearskins. But I wouldn't change those days for the world!

But you all know my story and I'd be remiss if I didn't take a few words to thank the unsung (and incredibly talented) heroes who are the reason **Jump Point** actually turns out so great every month. So a round of (virtual) applause for Michael Alder for his stunning article layouts, Martin Driver for making our prose sing and, of course, Cherie Heiberg and Adam Wieser for the healthy dose of lore we get every month. And where would we be without the tireless producers from across several disciplines who come together to make it all happen? Emily Engle (Subscriptions), Matthew Simpson (Marketing Art), and Stephanie Bedford (Narrative). In fact, this just reminds me that we really need to do a **Jump Point** about the making of **Jump Point**… too inside baseball? Ah, I'm sure we'll find room somewhere in the next hundred issues!

This month, we spend some serious time talking about mining, with an in-depth interview with designer Chris Speak covering the new mining equipment upgrades. This is one of those **Jump Point** interviews that really benefits from the format with plenty of space to let Chris present all the information at his level, which I believe makes for both better-informed readers and a better long-term history of *Star Citizen*'s development. Then, we've got a second interview with the Planet Team covering something that has been going on in the background for quite a while and that is now coming to a head: the polish of the Stanton System. They've been introducing new technologies and systems to our oldest planets as they've come online and the end result is that the Stanton we've been adventuring around recently is very different from the one that first launched a couple of years ago!

Over on the lore shelf, we have a brand new Galactapedia entry covering Magda Hurston, whose importance I'm sure you can already gather from the familiar last name alone. Plus, an excerpt from "On the Path," the autobiography of 28th-century Imperator Erin Toi. It's great stuff!

With that, thank you to everyone who has stuck with us for so many issues… I hope we've helped make your subscriptions a little better. I'll see you next month for number 101!

Ben

DEEP DIVE
NEW MINING
COMPONENTS

Star Citizen added the very first mining feature in June 2018 with the launch of Alpha 3.2. Since then, mining has been readily expanded and enhanced, each time building towards a comprehensive system that takes into account real-life player feedback. **Star Citizen** Alpha 3.13 introduces another complexity to make mining potentially more challenging and more rewarding: player-selected mining components that impact the function of your mining laser. To find out more, we spoke to veteran **Star Citizen** designer Chris Speak who walked us through everything that went into the new system with plenty of detail!

BEGIN TRANSMISSION →

JUMP POINT: *Hi, Chris. Please introduce yourself!*

CHRIS SPEAK: Hi! My name is Chris Speak, I am a Systems Designer at Cloud Imperium Games in Frankfurt Germany and I have been working on *Star Citizen* since 2015. I started here as a senior QA tester, typically (but not exclusively) as an editor and tools tester due to my background. I've also participated in various live demonstrations - the one I'm most proud of was being the Prospector pilot during our first showing of the planetary landing tech at Gamescom 2016. Not long after that, I moved into systems design where I worked on FPS harvestables, FPS mining, caves, landing zones (Lorville and Area18 mainly), ship mining, refineries, UI, and a whole lot of design documentation that we are just itching to action at some point in the near future!

JP: *First, what was the state of mining before your work on the components?*

CS: Mining felt to be in a fairly solid spot. All of the pieces were there to be expanded on, but we felt that we wanted to add more variety to the gameplay to provide something more in the way of a challenge, even if that challenge is simply to figure out how you want to play and sort your ship's loadout accordingly. This mentality hasn't changed much as we're always looking at ways to improve on the formula, to add interesting mechanics to the gameplay and provide players with choices that not only affect their gameplay but do so in meaningful ways.

JP: *Could you give us a high-level view of the new mining component update?*

CS: Okay, so basically we started out with mining consumables, which are the equivalent of (to use more standard MMO terminology) chugging a potion or casting a short duration buff on yourself to achieve something that your base stats typically wouldn't allow. We feel like these work fine for what they are (a short duration improvement) but when we built them, we originally intended to make the system as scalable as possible so that it could be used in a variety of ways without doing too much in the way of reworking the base code that supports it. This is where the new mining modules come into play.

For starters, we heard the feedback about the naming scheme sounding a bit too "gamey" (and we agreed wholeheartedly!), so from now on we are using the following two terms:

- Active Mining Modules
- Passive Mining Modules

As you've already gathered from the names alone, Active Modules are the current mining consumables we have had in the game for the past few releases that require activation, run for a certain length of time, and have a finite number of charges. Passive Modules are the new components we are adding in Alpha 3.13 that would (to return to more MMO terminology) function more like "gems" in your gear that permanently modify your mining laser's stats for as long as they are equipped. These will be chargeless modules that provide lower-level stat modifications to your lasers, which they achieve by having a different activation method in our component record setup. (They are essentially activated the moment they are attached to your laser and have no duration, so never end.) It's

the same exact system with a whole new world of possibilities, all from changing two values.

Additionally, we also heard the various calls for more variety in the actual bonuses being provided, so there are now a few new ones being implemented, such as:
•Laser Power
•Extraction Rate
•Inert Material Filtering

What we're hoping to achieve with these is to allow players to mix and match both Passive and Active Modules, tweak their loadouts in a way

that makes sense to them, and provide different players with different playstyles a way of tailoring their gameplay to how they want to engage with the mining system.

JP: *Looking at both of these things, what was the impetus for adding these components? Why was it decided mining needed them?*

CS: There were actually three solid reasons for going in this direction:
•We felt that there were some small gaps we could fill in the gameplay loop to support both the active, hardcore miners and the more passive miners

•We felt that mining would benefit from more functionality to this system, such as the new modifiers being added
•We knew that the amount of work to get these done from a design perspective was actually considerably less than the initial implementation of the mining modules due to the scalability of the system

All-in-all, it feels like a huge win to implement something important using a system that already exists to support it.

JP: *How many new components are being added? Could you walk us through what they do?*

CS: In total there are 6 different Passive Modules being added to the game. However, each of these is split into 3 different tiers of power, meaning there are 18 in total. Tier 1 modules will be the cheaper options intended for newer miners or people looking to experiment with different setups. Tier 2 will be a mid-range option, and Tier 3 will be the high-end option for people who want the very best. Stats scale accordingly to make the more expensive modules more worthwhile owning, but the cheaper options will still be viable too.

As of writing this, the balancing is still being finalized, but short of any radical changes, we're looking at the following:

Thermyte Concern
    Torrent Module: Increases laser power, increases instability

Focus Module: Reduces resistance, increases instability

Shubin Interstellar
    Rieger Module: Increases optimal charge window size, increases resistance
    Vaux Module: Reduces instability, reduces optimal charge window size

Greycat Industrial
    XTR Module: Increases extraction rate, reduces laser power
    FLTR Module: Reduces inert materials on extraction, reduces extraction rate

The idea behind these is that, like the other modules, they ask players to make a choice about what they want and what they're willing to give up to achieve it.

Do you lower the instability of a deposit to make it less difficult to maintain the optimal charge but make the optimal charge window smaller? Do you reduce the number of inert materials you're gathering at the expense of making it a lot slower to extract deposits? How do you mix and match these to get the best setup for you? We want to provide players with the ability to choose these things, and we want to do so in a way that supports other systems that will come online down the road.

JP: *Is the system designed to add new components in the future?*

CS: Absolutely! There's no reason new modules couldn't be added further down the line or new modifiers added that add more variety to the current lineup.

Furthermore, the new modifiers being added are fully compatible with the Active Modules and not just limited to the Passives, so there's

no reason some new Active Modules won't make an appearance at some point in the future that use these or perhaps even other new modifiers. The system is designed in such a way that we can add new modules and new modifiers with relative ease.

JP: *What kind of choices must players make with mining components? Can I just stuff my mining laser with everything or do I need to be strategic?*

CS: The only limit is your imagination... and the slot limit of your equipped mining laser. But no, seriously, there are no limits to the combinations available to players. Mixing and matching Active and Passive Modules is both intended and encouraged and works as you would expect. Equipping multiples of the same module will also have its effects stack, the only thing that you need to be aware of is that Active Modules will still need to be activated for them to work, and stats can nullify each other if the modifiers directly contradict one another.

JP: *Are there situations where choosing the wrong components can be detrimental to a player's success in mining?*

CS: While there's no limit to the combinations you can equip, you still have to be careful that you equip modules that complement each other rather than cancel each other out. And, you also have to be careful that you don't unnecessarily make mining too difficult for yourself by equipping modules that provide negative stat changes that you find difficult to handle.

For example, equipping a Rieger Module alongside a Focus Module and a Vaux Module would largely result in you nullifying all three modifiers in play, whereas an FLTR, Rieger, and Torrent would give you a nice spread. Equipping three Torrent Modules might make your laser incredibly powerful, but the instability increase might be so strong that it becomes difficult to control and you inadvertently obliterate the deposit, yourself, and everything in 500+ meters.

It's up to you to decide how you balance these changes out and

figure out what bonuses you want and what sacrifices you're willing to live with.

JP: *Will components impact the actual process of mining as performed by the player or do they function automatically?*

CS: Active Modules remain the same as they were in Alpha 3.12, requiring the player to activate them at the right time to reap the benefits, but Passive Modules are always active as soon as you equip them to your mining laser in the Vehicle Manager in mobiGlas.

JP: *As a designer, what's it like to create a totally new system without getting to watch players use it?*

CS: It's not easy! As a systems designer, I've trained myself to think of as many edge-cases as possible for everything I design, but there are always things that slip through the cracks when it comes to putting a

UI for anything we want to signpost for the player. Outside of that, the Active Modules (as an example) also modify the laser beam visuals themselves, so VFX was heavily involved in that process.

JP: *What's the process of actually implementing something like this? Do you interface with the build directly or are you more of the logic behind the system?*

CS: A little-to-a-lot of everything, really!

To use the mining modules as the example here, first I designed the functionality of the overall system, which came in the form of a design document. This detailed things like what the modules do, how they are equipped, how they are activated, and recommended visual locations on the mining lasers themselves for where the modules should

physically sit when attached, and so on.

I created the entity records themselves, adding tags and localization strings for things like when the items are viewed in the inventory and when they are viewed in a shopping kiosk so that they show the information needed to see what they are about and what they do. I also had to set up the items in a way that would allow the VMA to interact with them correctly so that they could only be equipped to the mining laser.

Working in parallel with our team's game programmer, we hammered out the details of how the code should be set up (which was more of his expertise than mine!), how we wanted certain modifications to work, how we relay that information to the player, and various other steps to get to the point where we could implement a working module.

new system out there for millions of people to play with. Balancing a system like this can be very difficult, especially when something as simple as modifying a value by X% can have multiple domino-style knock-on effects to a ton of different systems.

We do our best to hammer out the "napkin math" when designing things, but the truest test of our designs always comes with the first release to the public, as the sheer number of people interacting with it will always eclipse any sort of safeguarding you can think of, and sometimes fresh sets of eyes numbering in the hundreds of thousands are what is needed to truly see where a design shines and where it struggles.

We do try to stay on top of things via the feedback we see on Spectrum and Reddit too, which we often try to act upon as much as we can, and we're eternally grateful for any feedback we receive, be it positive or negative. We also have our own internal analytics that shows us things like how many of a certain item has been used during the mining of a deposit so we can see trends and popularity to adjust things accordingly.

JP: *Do you do the balancing work yourself or do you get feedback from QA at this stage?*

CS: I largely do the balancing part myself, although we also run our systems through QA Test Requests where a group of testers tries to tear our systems apart before giving their seal of approval for release. QA tests everything, including "Does this work as intended?", "Is it fun?" and "Can you find some seriously silly combination of things that make this super broken?", so their feedback is vital to the process.

JP: *What other disciplines are involved in getting a system like this to release? An artist to create the modules, Narrative to give them a place in the 'verse?*

CS: It often depends on what the functionality calls for, but typically the bare minimum will be Art Team-support for geometry and materials, Audio for SFX cues, Narrative for the flavor and nitty-gritty details, and

After determining that we'd made a functional system that works, the next step was to go back to the design board to come up with several ideas for modules, what they each do, how they bounce off or complement each other, and repeat the process above to get them in and working. After that, we added the modules themselves to the shopping kiosks around the 'verse so they could be bought by players, which is handled by our economy designers.

Beyond that it largely boils down to rigorous testing, reworking things that don't work, getting feedback from various parties, and making any changes that were deemed necessary or desirable. When all of that has been done and we get the seal of approval, it ends up in the next release of the game.

JP: *Walk me through the experience for a new player. I've got a Prospector and some credits burning a hole in my pocket… what's the process of acquiring and using these new components?*

CS: So first of all, you'll want to head on down to a shop that sells mining equipment, such as Dumpers Depot (Port Olisar) or Shubin Interstellar (New Babbage), and buy yourself the mining modules you wish to use. If your Prospector is using the basic Arbor laser that it comes with, you'll be able to use one module, as that laser was recently rebalanced to include a module slot by default. But, if you're looking for more, you'll need to buy an aftermarket mining laser like the Helix, Impact, or the increasingly popular Lancet.
After buying your Mining Modules (and laser, if you wanted one), you can simply open your mobiGlas, use the VMA to view the loadout of your Prospector, select the laser to equip it, and then equip the modules clicking each respective sub-item slot and selecting the module you wish to equip. Once you've set your loadout, save it and request your ship from the Flight Terminal and you're off to the races.

JP: *Do you track community feedback when doing this kind of work? Does it factor into how you are balancing the system?*

CS: As I mentioned above, we often receive great feedback, whether it's positive or negative, from both Spectrum and Reddit. Additionally, we have our Issue Council that we receive regular reports from (as well as being able to check it ourselves on a regular basis) so we tend to be fairly clued up on the goings-on in the game at any point in time. We're not always able to action fixes or changes immediately as we have so much to work on, but anything truly game-breaking often gets rushed ahead of anything else and worked on immediately. The feedback we get, whether it's "This item sucks!" or "I love this one!" or "This one causes all stars to explode when you activate Mining Mode" is always appreciated, and we often try to deliver on some of the best feedback as our backers are super passionate about the game and sometimes their ideas and feedback, while it may or may not be in the direction we want to go with a system, will sometimes spark other ideas or debates that result in new features that bring at least some of what people are hoping for into reality.
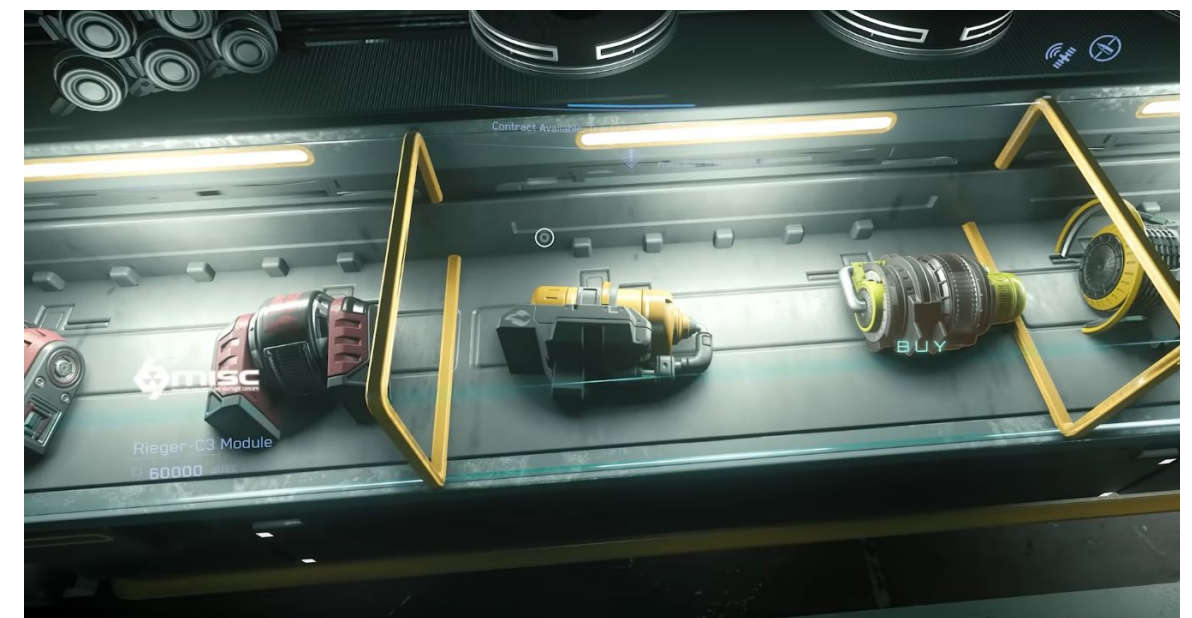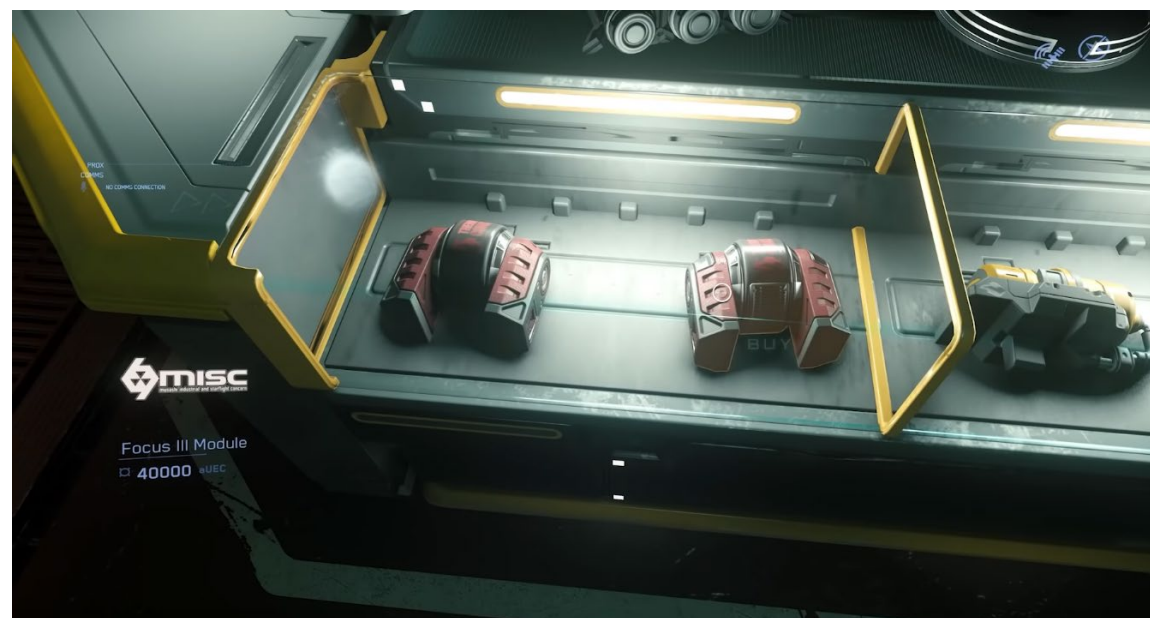
CS: I just want to say "Thank you!" more than anything else! It's fascinating working on a system that is developing the way mining is, but to have each step of the way be something that is being actively played with is more helpful than you can possibly know. We're working on fleshing it out, adding more systems (that can be used in other gameplay loops entirely too), and balancing what is already there, but we couldn't do it without you.

JP: *Please let us know who was involved in making this update possible for our credits!*

CS: There may be more than is in this list as sometimes stuff goes on within departments I'm not a part of, but the main people involved in the mining modules across multiple releases so far were:

Guillermo Bilbao – Gameplay Programmer
Dan Trufin - Systems Design
Leo Vansteenkiste and Aran Anderson – VFX
Colin Howe - Audio
Simon Bursey – UI

END TRANSMISSION

JP: *Is there anything you'd like to see added in the future that you can talk about now?*

CS: Well, we've got more ideas for potential modules and modifiers in mind, and more tuning and balancing will likely be done in the not-too-distant future due to other systems we're working on that will tie into the mining system, but nothing concrete to mention right this second!

JP: *What will you personally be working on next?*

CS: I tend to find myself bouncing around a bit, but my next system is the design and creation of mining gadgets. I can't go into too many specifics right now, but a high-level description of them would be that mining gadgets are FPS tools used in ship mining. What this will essentially mean is that players will be able to exit their ships with a device in hand, attach said device to a deposit that is proving too difficult to mine with their current loadout, activate it, and it will provide further modifiers to the deposit for its lifetime. These gadgets will be reusable providing you can find and retrieve them (don't worry, we're working on making them easy to find!), but if you crack a deposit too violently, you risk destroying the gadget completely.

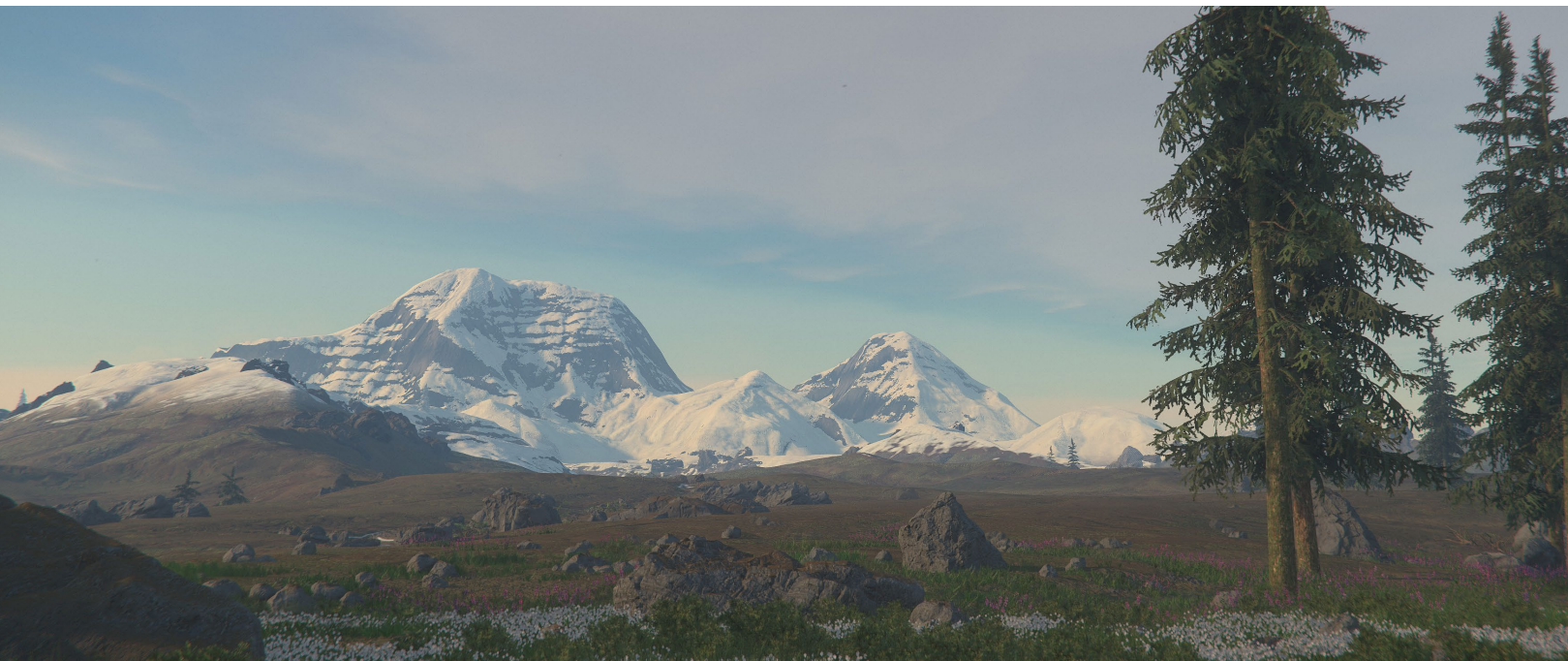**JP:** *Do you have any special message for the community as they look forward to the mining changes?*

DEVELOPER INTERVIEW
STANTON POLISH

Take a moment to look at the Stanton system as it is today, with its hundreds of locations and countless procedurally generated tracts of land across moons and planetoids. Now, think back just a few patches to how it all started, with Port Olisar and a couple of points of interest. That is to say that Stanton has changed and evolved a great deal over the years to the point that it's absolutely nothing like the way it began. That's a nice metaphor for the entire project, of course, but it's also a conscious effort on the part of the Planet Team, which has been working to polish Stanton and adapt back the new technology it has developed to Star Citizen's earliest locations. We sat down with Senior Environment Artist Pascal Muller to learn how it happens and what we can look forward to in the future.

BEGIN TRANSMISSION →

JUMP POINT: *Hi Pascal, please introduce yourself!*

PASCAL MÜLLER: Hi, my name is Pascal, and I've been with CIG for over five and a half years. I work as an environment artist and have been involved in the development of the procedural planet tech since day one.

JP: *High level, what is the Stanton system polish?*

PM: Since our planet tech is evolving constantly, there are always new features and improvements that make it into the game engine. For this reason, we have to go back to existing content that we created before the implementation of the new features. This is the case with the planets and moons in the Stanton System.
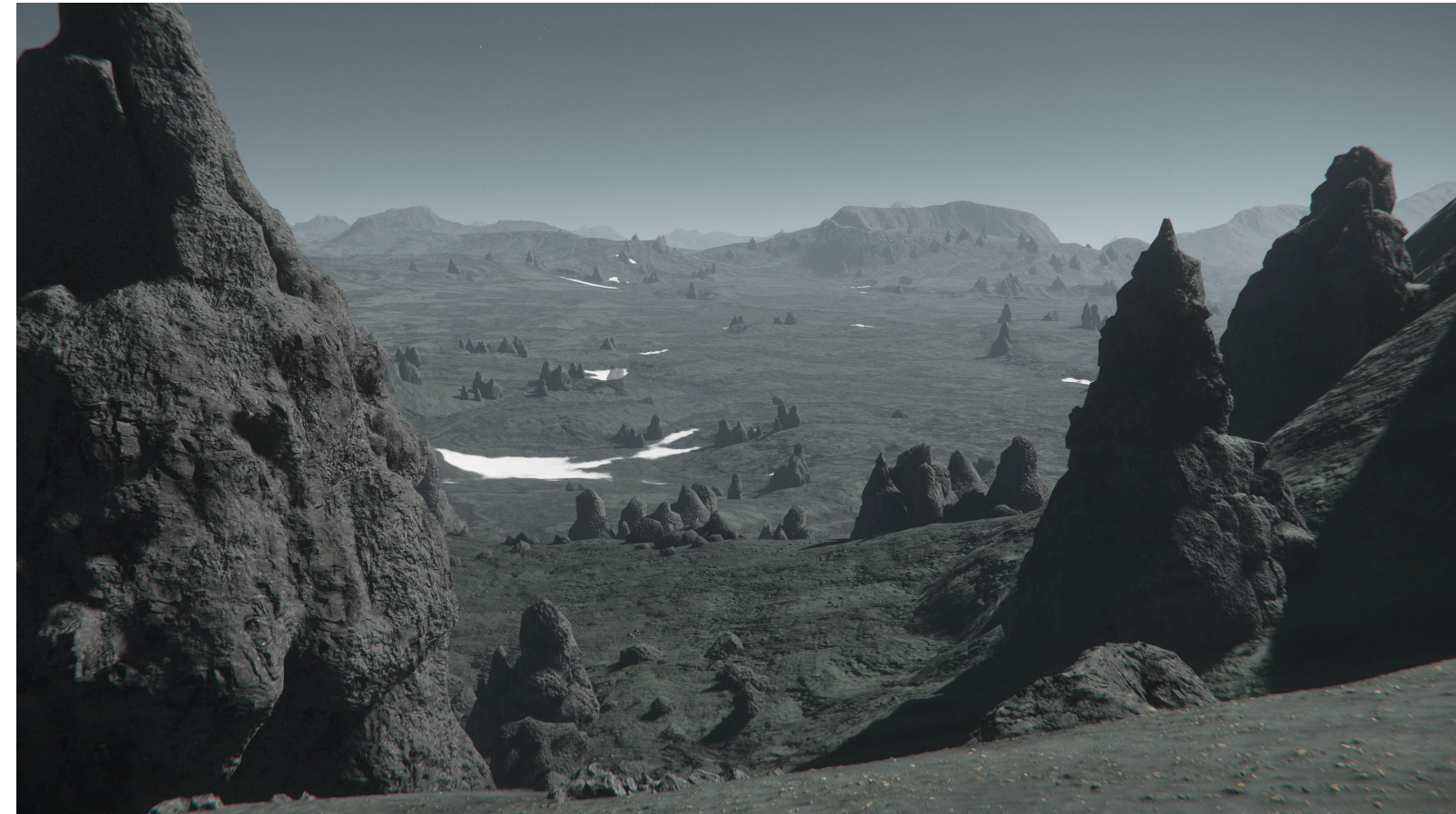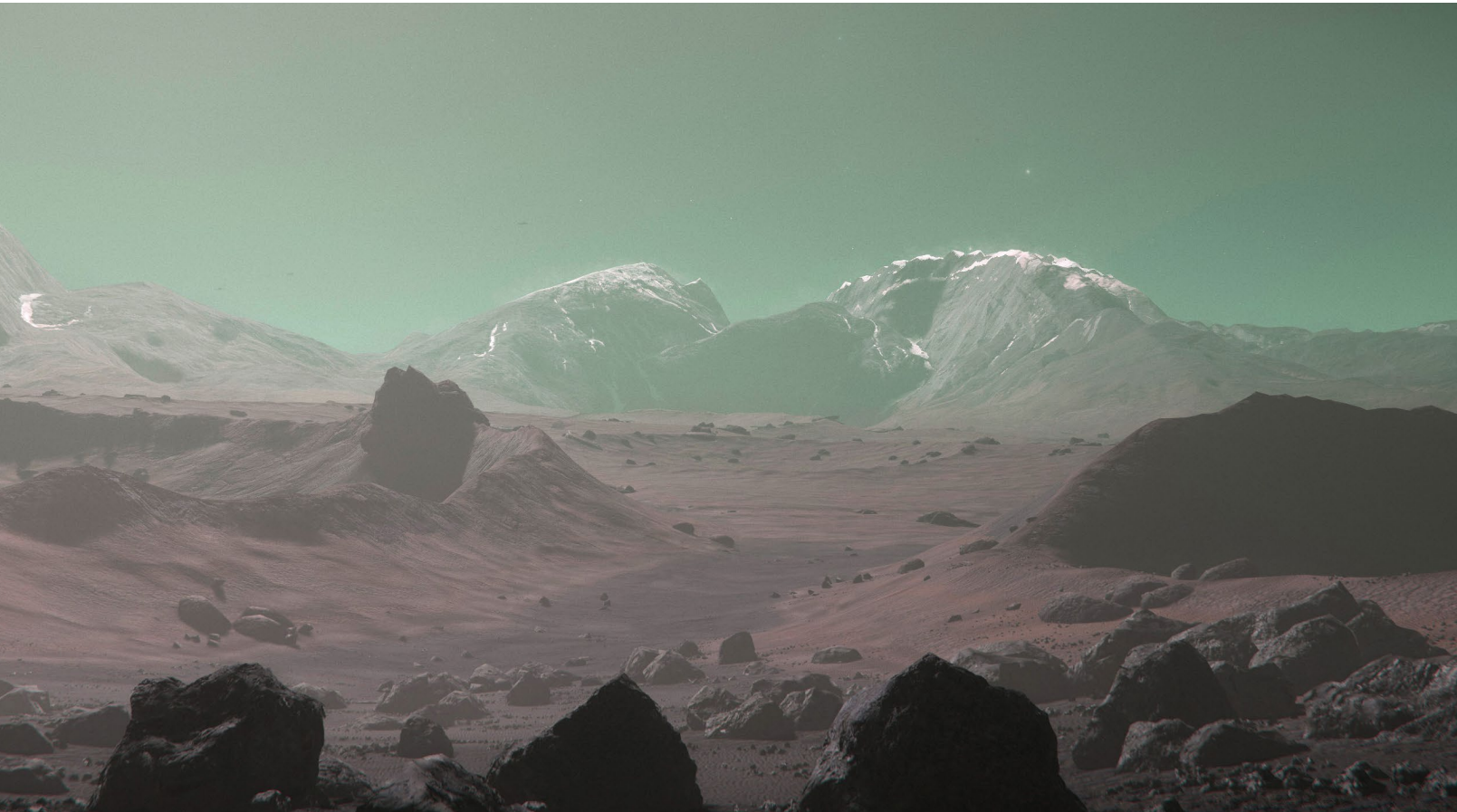
JP: *What is the process for creating a new planet in the first place? I think everyone has something different in their mind when they hear about your work ranging from a 'make planet' button to carefully arranging every detail yourself. What's the reality?*

PM: Before we start building anything, we make sure we have the lore and the concept art. Based on the concept paintings, we break down all the separate assets that we need to make the planet come to life. This includes height maps that shape the terrain and form mountains and canyons, and materials for the ground, like sand, rock, soil, and grass. It also includes objects that get scattered on the terrain such as boulders, plants, trees, and so on.

Once we have all the requirements down, we can build a schedule and distribute the work to the team. Now the fun can begin, as it's time to set up the planet entity with the proper parameters, such as radius, atmosphere, oceans, and clouds.

At this point we still have a gray ball in space. As a next step, we create the climate data, large-scale height map, and splat map. These maps are fed into the planet entity and define temperature, humidity, and where biomes will appear later on, such as mountains, deserts, and coastal regions. With this data, we can build local height maps and distribute them around the planet to define the look of the terrain. With that, the groundwork for the next steps is laid out and we have a nice-looking planet with all the terrain features it needs. Then, it's time to take care of the last missing ingredients - the terrain materials, objects, and object presets that make up the biomes. The object presets are collections of objects that dictate the logic of how objects are scattered on the terrain. These are then married together into our biome brushes, which are like pots where all the ingredients land - throw in your tree object presets, add a gravel object preset, and sprinkle some sand, soil

on the ground, and tint it with some brown and beige hues... delicious! Depending on the complexity of the planet or moon, the number of brushes varies between 5 to over 30.

Phew... it's done! At this point, the Environment Art Team is through with its work and we hand it off to the FX, Design, Audio, Lighting, and Locations teams who all add their magic. So, as you see, all though we speak of procedural, there is still a lot of work that goes into each planet and moon.

JP: *So that's how you build a planet... how do you UPDATE one?*

PM: The process is pretty much the same. Fortunately, we didn't have to start from scratch as the height maps and the general terrain remained as they were.
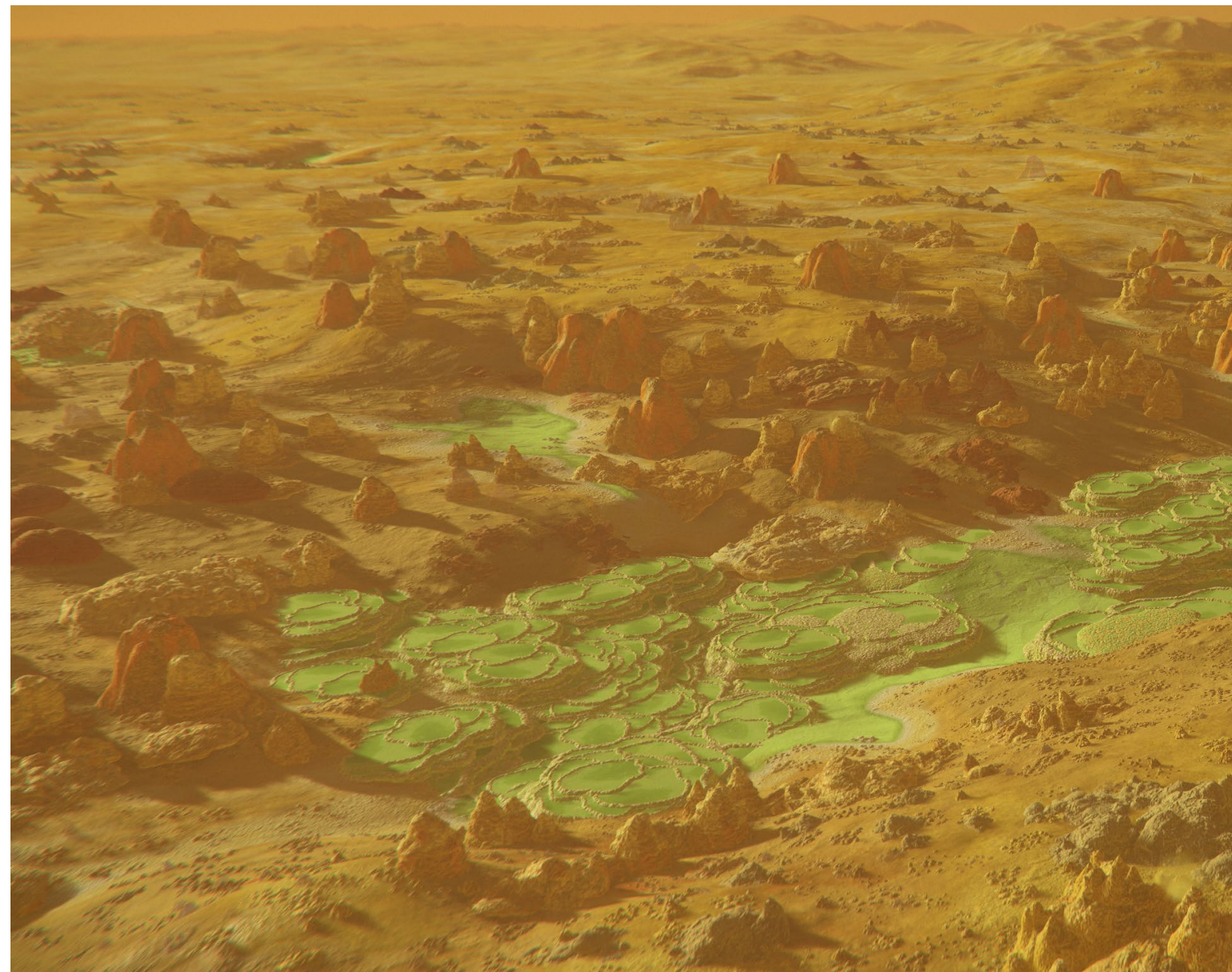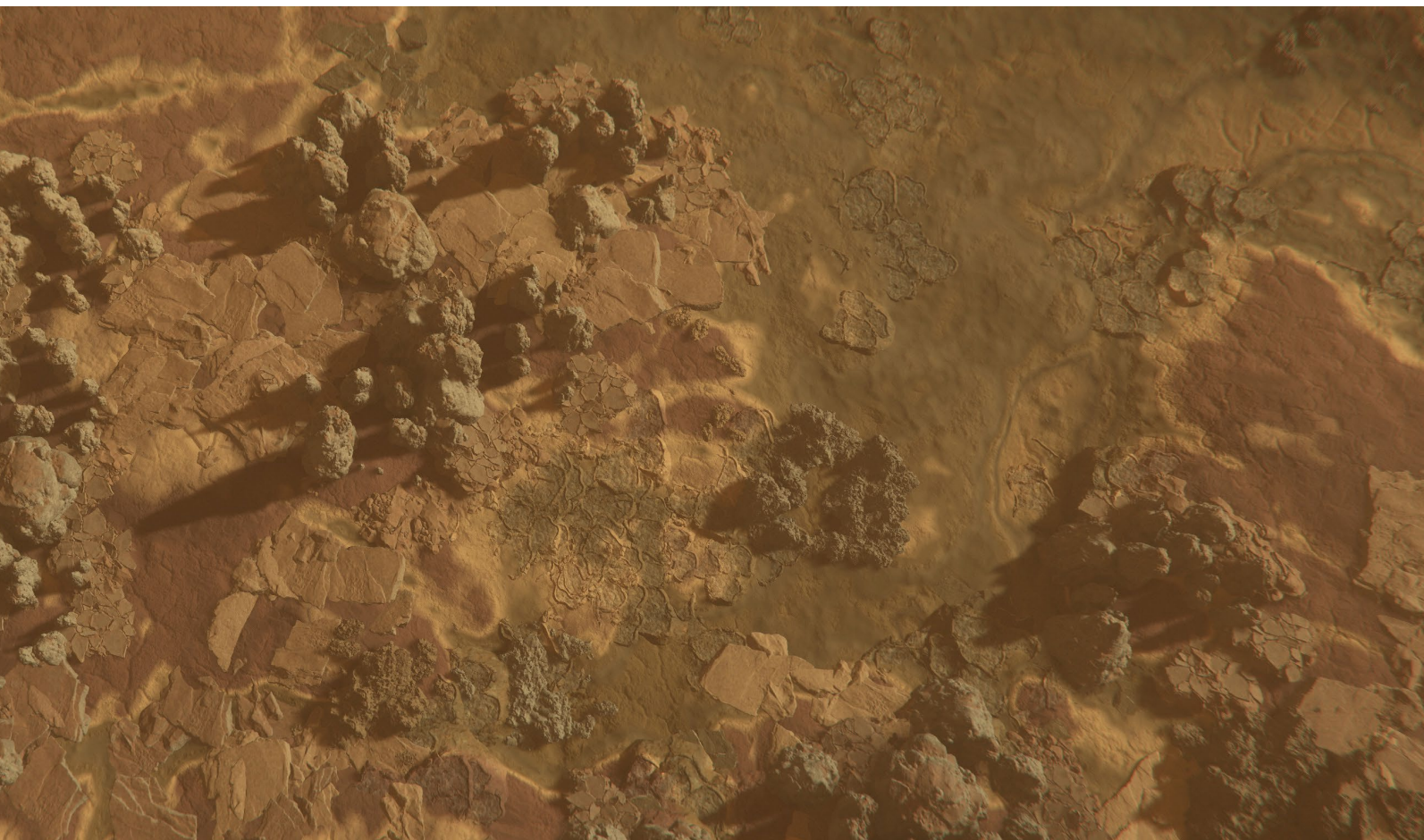
JP: *How long have you been working on these changes?*

PM: We started the polishing phase in Q4 of 2020 when we went through the first half of the system. In Q1, we wrapped up the remaining work.

JP: *Could you go into detail about some of the new technology that has been developed since Stanton launched? What are you going back and applying with this polish?*

PM: We changed the way we build the geological objects that we scatter on planets. The Engine Team built a new shader that improves the look of the geology a lot. The way the objects integrate into the terrain has seen big improvements as well. Additionally, some features

in the object preset setup have improved. The ground materials that we use have also been completely replaced by photo scanned assets. To recap, the Stanton polish focused mostly on replacing, reworking, and improving ground materials, geology assets (rocks and boulders), and the way we scatter them.

JP: *Give us a couple of examples of the changes we might see… I'm especially interested in the little details that players might never even notice but that are important to how all this comes together.*

PM: Something I really like is the fact that we started using tessellation on geology assets. What tessellation essentially does is subdivide the geometry of an object. Through this, objects are made up of many, many more vertices (points in 3D space) that define the surface.

These points can now be displaced so that you get a super-detailed surface look for the rock. This is really cool because you don't get any straight, blocky edges on the rocks anymore.

**JP:** *Is this work procedural or is there a handmade element to it?*

PM: We do have some tools in the pipeline that automate certain parts of our work for creating assets, which speeds up the process. We get the photo-scanned assets from an existing library, which is also a huge time saver. But in the end, there is a lot of manual work that goes into getting everything to work together - you can have all the best ingredients and still manage to ruin the final frame if they are not put together in a meaningful way that pleases the eye.

JP: *What kind of references do you use when creating or updating these environments?*

PM: We went through the attic and dusted off the old concepts we used when we did the Stanton system originally. The aim was to stick to the old look, as we wanted to improve the visuals without losing the general vibe each plane and moon has.

JP: *Is this a 'reset' of the existing planets or more of a modification?*
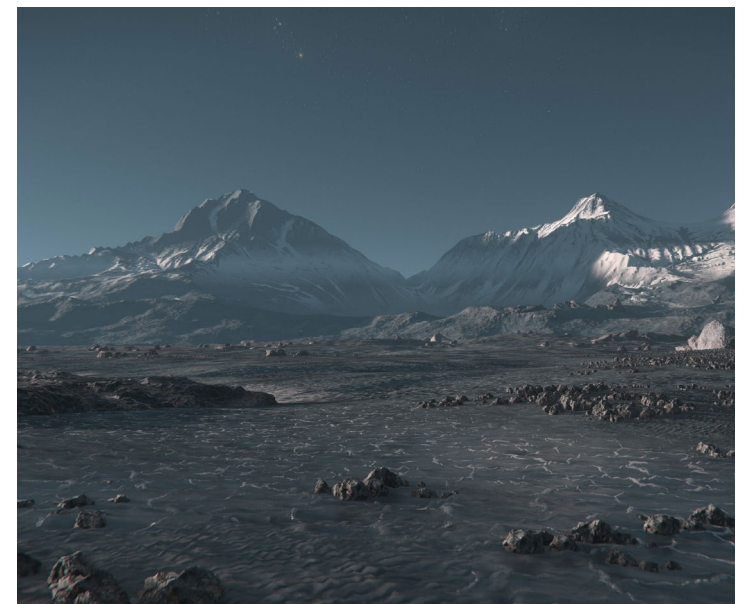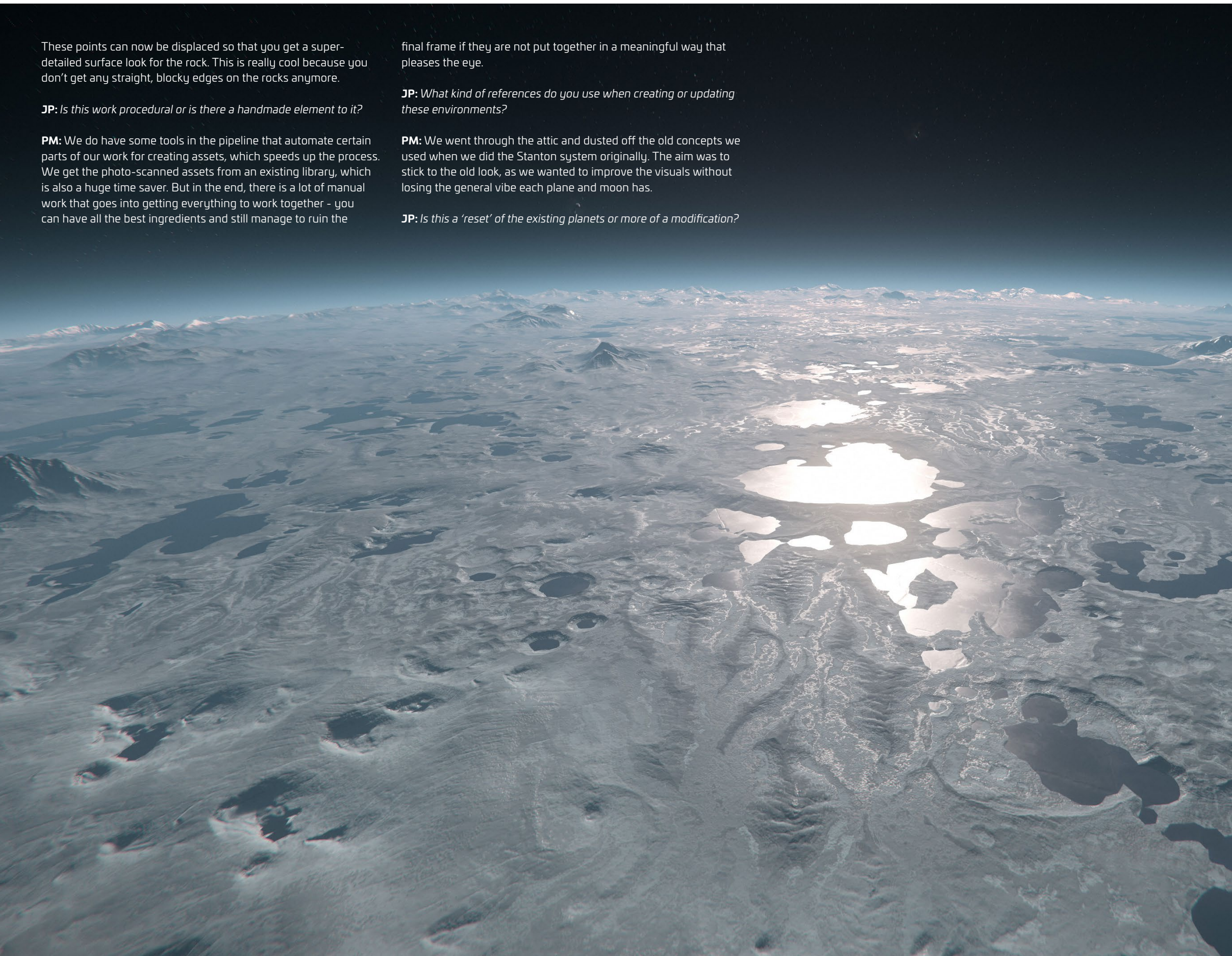
JP: *How will this work apply to future star systems? Have we reached a kind of 'how to build a system' yet that other teams can work from or is it a continual process of updating and polishing what has been released?*

PM: There are still some areas of the planet tech and tools used in the pipeline that can be improved; vegetation is something where we hope to see some progress. If there are new improvements coming in and we think it's worth going back again, we definitely will.

JP: *Do you work closely with other teams or are you more on your own with this aspect of the project?*

PM: We work fairly independently on the planets. Our schedules are built in a way that we have certain lock dates where our work is signed off before being sent to other teams, such as FX and Audio. This update was all about environment art, so no big changes from other departments were needed.

PM: I'm sure backers will wonder if locations they've scouted in the past (a crashed ship or a mineral vein or what have you) will relocate as part of this. It is possible that some minerals may be in different locations due to climate and biome tweaks, but the crashed ships should all be in the same location as before.

JP: *My understanding is that older moons will be more impacted by this work than newer ones. How does the polish differ on the older planetoids?*

PM: Actually, this is not the first time we've added some improvements, so the older planets have seen more than one update so far. Because of that, they were more or less in the same state as the newer ones.

JP: *Do you have a favorite location in Stanton?*

PM: I love the taiga regions of microTech, especially the quiet areas with mostly shrubs and only a handful of trees in the distance where the eye can rest. It's very peaceful and reminds me of autumn.
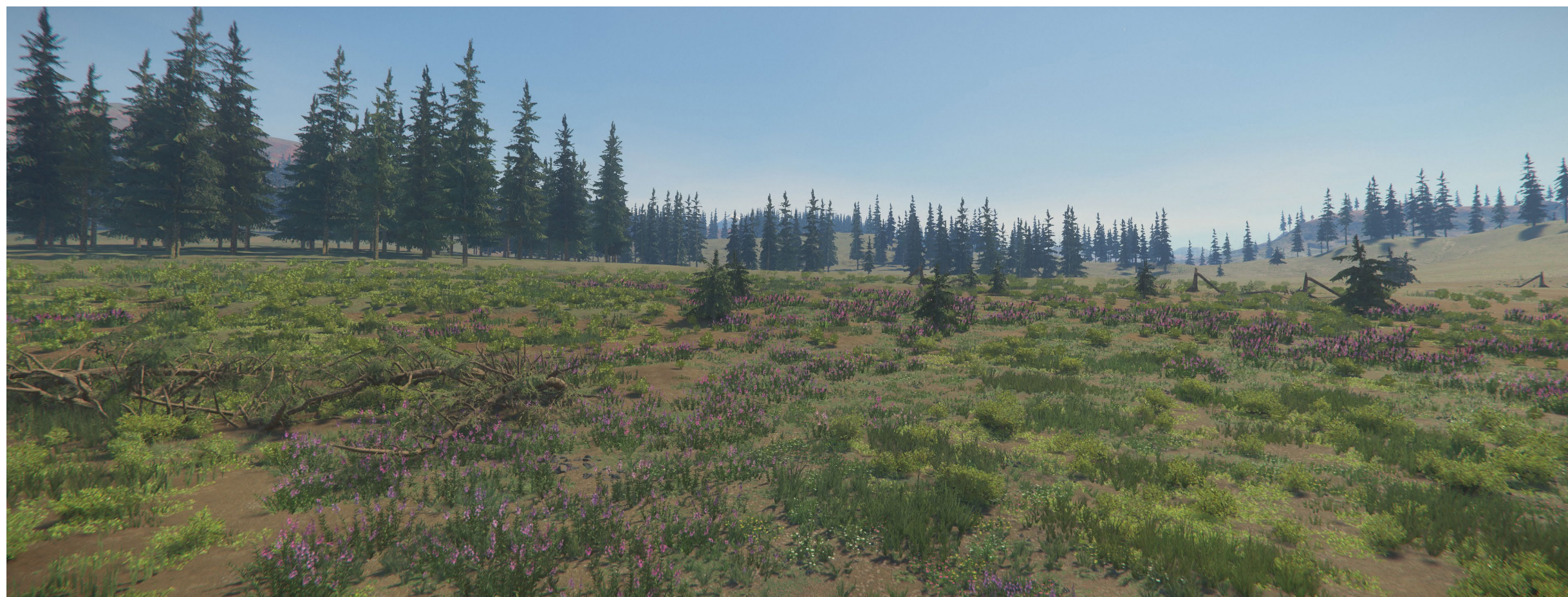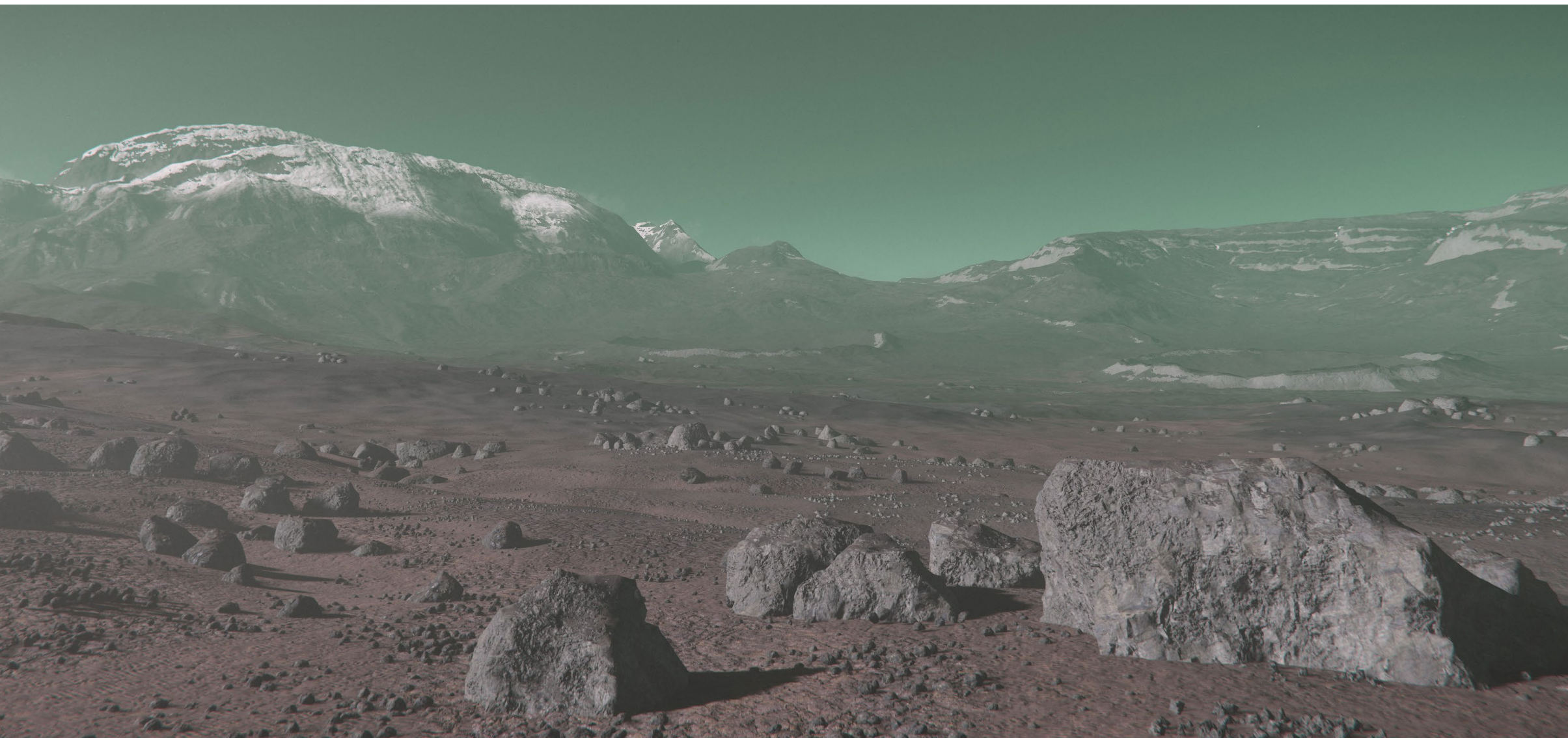
**JP:** *Do you track community feedback when doing this kind of work?*

PM: We do get some feedback from the community every now and then. Sometimes we also watch recordings of players on YouTube to see how they navigate and where they spend time. In this way, we can focus more time on those places since polishing an entire planet equally is an endless task.

JP: *Do you see this as Stanton's final form, or do you anticipate there's more work to be done? Is there anything you'd like to see expanded that you can talk about now?*

PM: I think, for the most part, this is the final implementation. Of course, it might be that we tweak things here and there a little. microTech and Hurston may be revisited in the future, as they have a lot of vegetation and we hope to see some improvements on vegetation shading in the future.

JP: *What's next for your team? Do you have more individual worlds to build or do you focus on the technology behind them?*

PM: The Planet Team is, most of the time, half in production for new planets and moons and half in research and development for new tech with the Engine Team. *Star Citizen* always requires new technology, so it's rare that the whole team is purely focused on growing the universe.
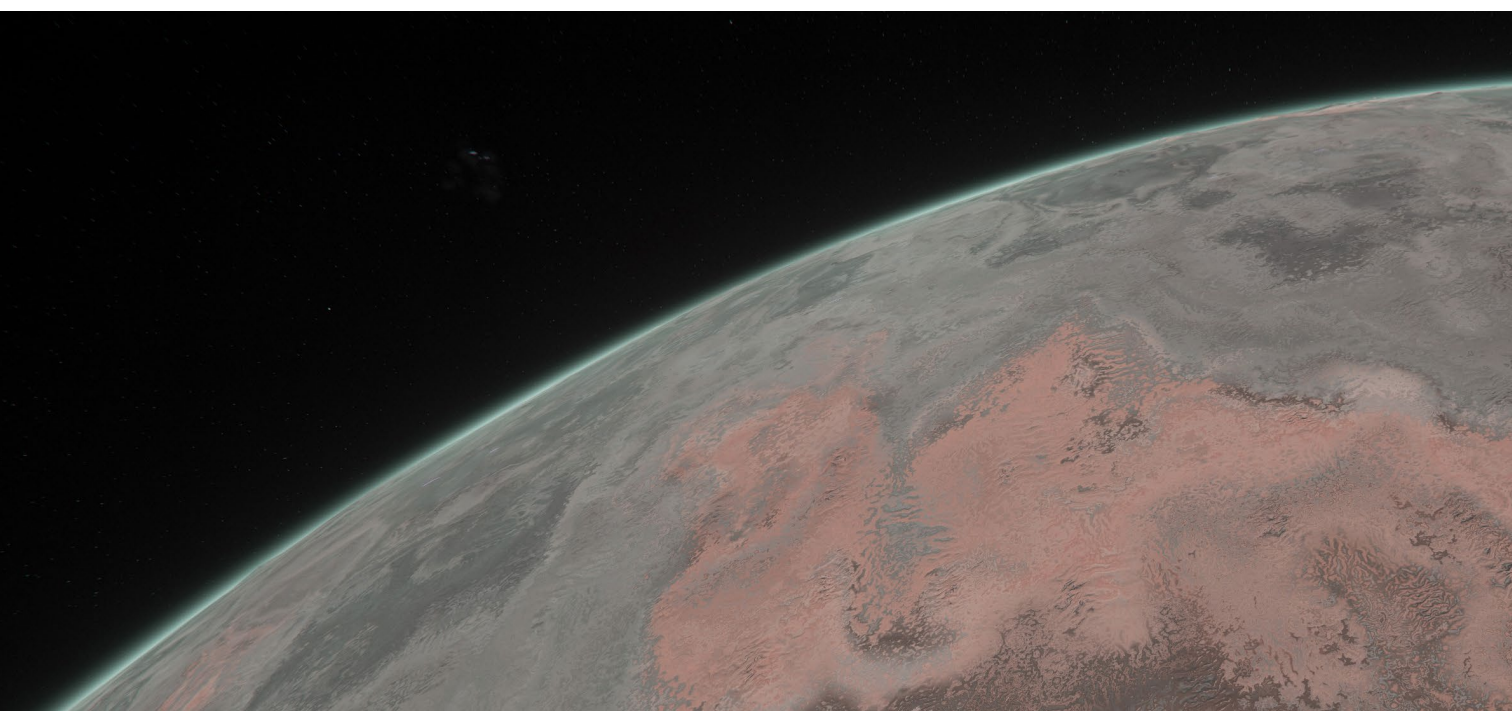
JP: *Do you have any special message for the community as they look forward to once again exploring these strange new worlds?*

PM: *It's dangerous out there... and don't do drugs...*

JP: *Please let us know who was involved in making this update possible for our credits!*

Humberto Aspero Eyre
Okka Kiaw
Will Hain
Sascha Hoba
Anis Hireche
Alistair Brown
Marco Corbeta
Florian Sollanck
Özlem Sagbili
Maximilian Keilich
Patrick Gladys
Sebastian Schröder
Pascal Müller

END TRANSMISSION

GALACTAPEDIA

MAGDA HURSTON

Magda Hurston (2833-2921) was the CEO of Hurston Dynamics from 2883 to 2915. It was her initiative that led the company to purchase Stanton I from the United Empire of Earth (UEE) in 2865. The third moon of Hurston is named in her honor. She was succeeded as CEO by her son, Gavin E. Hurston.

EARLY LIFE

The oldest child of Chesterfield Hurston and Mariah Park Hurston, Magda was born in 2833 on Rytif (Bremen II) at a hospital near the site of Hurston Dynamics' secondary headquarters. She received her early education on Earth (Sol III) and attended the Haymore School of Economics in Geneva for her undergraduate and graduate degrees, where she attained a Master of Science in Organizational and Social Psychology. Her dissertation, Live, Work, and Play: Employee Productivity in Controlled Environments, was selected as one of the winners of the Best Dissertation Prize for the 2854/2855 academic year. After a year-long internship at the University of Persei Analytical Research and Quantification (UPARQ) on Persei (Rhetor II), she joined the family business in 2856, starting as an Associate Operations Analyst.

HURSTON DYNAMICS

Magda moved upward through the ranks despite several clashes with distant relatives in higher positions, eventually becoming Chief Operations Officer in 2863. During this period, she made multiple cost-saving operational changes to Hurston Dynamics, such as utilizing nutritional supplements instead of fresh ingredients to reduce the cost of employee meals and opting for in-house production of worker protective equipment in place of renewing expensive outsourcing contracts. In 2865, she spearheaded her largest project: the purchase of governing interest and settlement rights for the naturally habitable planet Stanton I and its four moons from the UEE. It was under her advice that then-CEO Chesterfield Hurston agreed to the unprecedented expense. The changes they could make to the weapon manufacturing process, out from under the strict laws of the UEE, would save the company trillions. Chesterfield approved, and the planet Hurston was officially established.

While Hurston Dynamics' mining division broke ground on antimatter precursor mines on the surface of Hurston, Magda supervised the design and construction of the first residential buildings that would later form the heart of the Workers District. She took a brief break in 2867 after the birth of her son Gavin. When Hurston's first antimatter refinery plant was completed in 2872 and workers began to arrive, the need for a much larger settlement became apparent. Magda spent five years identifying areas to cut costs so that new construction could be built quickly and at low price. The city of Lorville was officially founded in 2877.

In 2883, halfway through the erection of Central Tower, Hurston Dynamics' new headquarters, Chesterfield died after a short battle with pancreatic cancer. Magda succeeded him as CEO. Under her leadership, daily work hours were extended for those under the Life-Labor contract, and a weekly task-completion competition to shorten workday minutes was introduced. These changes improved overall efficiency by 3%. She oversaw the completion of Central in 2890, as well as a wide expansion of the company's antimatter mining, processing, and weapons construction. The contract she signed to provide the UEE military with antimatter warheads netted record profits. She continued her father's strip-mining operations, exempt from the UEE's anti-pollution laws thanks to the planet's independent status, allowing speedy and cheap extraction of Hurston's natural resources.

She retired as CEO in 2915 and was succeeded by her son Gavin, though she stayed on the board of Hurston Dynamics in an advisory capacity.

DEATH

While en route from the Hurston Central building to Teasa Spaceport, where she was planning to travel via a private service to her family's vacation home on Cassel (Goss II), her shuttle suffered a mid-flight collision with another shuttle. She and six other people died in the crash.

ON THE PATH

BY: IMPERATOR ERIN TOI

Imperator Erin Toi's autobiography, "On the Path," provides an honest and insightful look at her personal life and political ascension to becoming the first post-Messer Imperator. The book's unique format finds the former Imperator focusing on important days that forever changed the trajectory of her life. Below is the excerpt from March 11, 2777.

MARCH 11, 2777

SHANGHAI, EARTH, SOL SYSTEM

"It's time to go, Senator Toi."

When asked about that day, those words are first to mind. Calmly whispered to me by Irfan Udell, my security chief, before I could ask the crowd of constituents for more questions. My first in-person event since my election to the Senate was already an hour over schedule. I apologized to those still waiting and asked my staff to gather all remaining questions.

Irfan casually chatted with me during our walk to the hangar. Something he rarely did in the early days. Waiting inside was a full military transport. I had expected a small hopper to ferry me to Shanghai's waterfront gardens for a sunset walk. Before I could inquire, Ifran handed me a dossier. Irfan informed me that Shanghai officials had just arrested two individuals involved in a plot to assassinate me. Flipping through the files, I saw records of comms discussing my scheduled visit to the gardens, schematics, three suspect profiles, and photos of two people being arrested while unloading crates from a handcart. Since the third suspect was still at large, he deemed it imperative to get me off-world.

Whenever I reflect on that day, Irfan's calm, professional demeanor always stands out. Only later did I learn how his team had worked tirelessly for weeks to orchestrate the sting without allowing it to affect my appearances or tip their hand to Messer loyalists. If Irfan's team could defy the regime, then so could I.

PRIME TARGET

To anyone paying attention, the Messers effectively began hand-selecting Earth's senators in the mid-2600s. Although Senate elections still occurred, the eventual winner was always obvious thanks to pervasive ads and a non-stop media blitz focused on a specific pro-Messer candidate. Around the same time, particularly vocal political opponents began to disappear (we now know to Charon's secret prisons). Earth's opposition parties withered along with any enthusiasm to run against a Messer-backed candidate, eventually leading to several Senate elections where only one candidate appeared on the ballot.

By the time I registered my run for the Senate in late 2775, I knew the risk I was taking but didn't let it deter me. Honestly, I never expected to win. Only to show the empire what was clear to many of us on Earth; the Messer's political influence was waning.

Once elected, the Senate assigned me a security team led by Irfan. I had heard that Messer loyalists were known to be installed with the Senate

security services to keep tabs on senators, but an emboldened block of anti-Messer senators had recently restructured and reformed the security services to end such surveillance. Irfan's team quickly earned my trust and eventually my eternal gratitude for their actions in Shanghai. As we broke atmo leaving Earth that day, Irfan promised that his team would continue to do everything within their power to keep me and my staff safe, and I promised to fight like hell to save the empire from the Messers.

STRATEGIC VISION

Exhausted yet strangely energized from the events of the day, I spoke with Terran Senator Heng Ibrahim who was then the head of the Senate's Defense Committee. He told me privately what could never be uttered publicly, that the Messers were responsible for sending my would-be assassins, but they still had enough loyal senators to stop any investigation. Despite my desire to confront Imperator Messer X over the incident, now was not the time to pick a fight.

Unofficially though, further details about the failed assassination attempt continued to trickle in. The arrested conspirators, Shigeki Renshaw and Dalton Boudet, were both in possession of valid employee IDs that allowed them to bypass security checks at the Shanghai gardens. An attempt to access information on their comps was thwarted by an advanced encryption system that wiped the devices when a password

wasn't entered within the allotted time. Despite a variety of threats and incentives, Renshaw and Boudet refused to talk and both were killed in jail before making it to trial.

Strategically, it was better to focus that political anger and energy onto issues that improved the Empire for all. To show voters how a good, responsible government could work if they wanted it. Publicly, this included legislation that restored the voting rights of political dissidents (which failed upon introduction, naturally), and behind the scenes, attempting to establish positive diplomatic relations with the Xi'an that eventually led to the Akari-Kr.ē Treaty of 2789.

History has proven this strategy effective. In the aftermath of the Messers, we now know the failed assassination attempt angered Linton and Fiona Messer, who believed it made their father look weak. Due to this and various other grievances, the two began plotting what would become the coup at Khanos Stadium that deposed Ulysses Messer X in 2781. While the regime festered from the inside, Senatorial influence increased and positively reformed other parts of the government. I saw the system begin to heal before my eyes. That's why, when the terrible and bloody 11-year reign of Imperator Linton Messer XI finally came to an end, I felt more confident than ever that everything was going to be ok.

Let's go to that day next, May 3, 2792.