

Fri, Aug 15, 19:30-20:30, rm 335-336, 2025 Seattle WorldCon Panel POP05 **Bridging The Expanse: The**

Villains!: “Explore the nuanced realm of villainy in The Expanse universe, where characters challenge our traditional notions of good and evil. Join us on a journey to understand the complexity of these villains, who, in their pursuit of power and justice, force us to confront the blurred lines between humanity & monstrosity.”

Bob Hranek (mod), **EB Helveg**, **Greg L Johnson**

[My career began with 6 years of USAF Computer Programming plus 34 more years as an Aerospace Systems Engineer. Since I was a Defense Contractor for the Intelligence Community, I’m usually depicted as representing *the Dark Side* on panels. Hence my ‘Protogen’ name plate. That being said, I do NOT speak for ANY of my employers! My role on this panel is to explain the justifications used by The Expanse *Villains* we’ll discuss. I OVERprepare for all my panels, so if you’d like my detailed 14-page file regarding The Expanse, then just email me at BobHranek@gmail.com]

The Expanse: The Greatest SF Television Series of the 21st Century!: “One of the most lauded SF TV shows in recent years. What is it that makes this show so special, & what, if anything, compares? “+“The Expanse is a wildly popular series that spawned 9 novels, 15 shorter works, & 6 seasons of excellent TV. What about this epic & characters made for such a hugely compelling experience? What impact did it have on SF, & what to watch next?”

Who **The Villains** [a character whose evil actions or motives are important to the plot] are depends on your POV.

Who are YOUR ‘favorite’ Villains, and Why? Most Evil? Most misunderstood? Most fun to Cosplay?

Bob’s picks: Worst= **Mao** 1st 3 seasons, **Duarte** after; ‘Favorite’= **Amos**; Most-misunderstood= **Cortazar**.

My candidates, in the show’s order of appearance: (**truly evil in Red**, **major assholes in yellow highlights**)

1. **Joe Miller**, a Star Helix Detective at the start, taking bribes & his casual killing style could be described as villainous.
2. **Vargas**, 2-bit criminal that pays bribes to not change the air filters of his tenants, leading to preventable injuries.
3. **Captain Shaddid**, OK with kidnapping, murder, covers up Miller’s Protogen Phoebe evidence, & fires Miller.
 - a. Still running Ceres’ security in book 6.
4. **Jim Holden**, reckless transmission of incomplete data leads to a lot of deaths & goes full ‘Miller’ in the 2nd book.
 - a. Roci kills >12 anti-pirate kills in book 2 & Holden somehow believes they had only remaining Protomolecule.
5. **Amos Burton**, LOTS of bad behavior in past & in the series, but is it forgiven due to his completely skewed morality?
6. **Executive Officer**, does his obvious insanity forgive him shooting a gun in his Ice Trawler Canterbury cabin?
7. **Chrisjen Avasarala**, uses gravity torture on beltlers at start; drives Franklin Degraaf to suicide seeking Mars INTEL; blackmails Carlos Davila by threatening to keep his son, Esteban, in jail; & releases classified data for political gain.
8. **Heikki Sobong**, OPA terrorist involved in smuggling stealth tech.
9. **Jules-Pierre Mao**, mastermind behind the entire murderous series of events starting The Expanse.
10. **Sadavir Errinwright**, UN Undersec-Gen until Avasarala provides proof of his treason with Mao; murders **Korshunov**.
 - a. Much later, in **#3**, he’s Lunar Supermax Penal Facility inmate 12-03-7154 & gets visit from son, Jefferson.
11. **Diogo**, minor Ceres water-stealing criminal later used by Dawes as a diversion to help steal Cortazar.
12. **Anderson Dawes**, OPA leader on Ceres and system-wide crime lord, dealing in piracy, drugs, terrorism, etc.
13. **Pock Mark** (or **Filat Kothari**), Loca Greiga thug who spears Dimitri Havelock in the Rosse Buurt (Ceres Red Light district).
14. **Col Frederick Lucius Johnson**, the UNN Marine “Butcher of Anderson Station” & 10 years later an OPA Leader.
15. **Gero**, Anderson Station dissident: ‘We should’ve dumped a few more bosmain into space, when we had the chance.’
16. **Thug #1 Lida**, ½ of Dawes’ OPA team that abducts, tortures, & attempts to throw Miller out a Ceres’ airlock.
17. **Thug #2 Kaipo**, ½ of Dawes’ OPA team that abducts, tortures, & attempts to throw Miller out a Ceres’ airlock.
18. **Uncle Mateo**, frustrated Belter miner, that suicide runs a load of rocks into a MCRN Scipio Africanus patrol ship.
19. **Bug Eyes**, abusive MCRN dude from Scipio Africanus patrol ship that pushes Uncle Mateo over the edge.
20. **Kenzo**, Carlos Davila’s corporate spy OK with leading Holden & crew to a lethal trap at Blue Falcon Hotel.
21. **Larissa Stadnichuk** (actress name) & other 3 of Black Ops execution team.
22. **‘Woman’** on Anubis & all other Mao assassins, willing to murder & start a war without hesitation.
23. **Antony Dresden** & all amoral Protogen scientists willing to sacrifice ANY number of people to get what they want.
24. **Nikil**, OPA Black Sky operative that planted the shuttle bomb trying to assassinate Avasarala. Johnson spaces him.

25. **Secretary General Sorrento-Gillis**, the stereotypical politician, willing to sacrifice millions for his own gain.
26. **Admiral Nguyen**, in league with Errinwright, tries to commit genocide on Mars.
27. **Cotyar**, Avasarala's hired special ops spy. No hesitation to kill in cold blood (Theo from Guanshiyin).
28. **Camina Drummer**, Johnson's 2nd in Command, OPA pirate with flexible morals, & President of the Transport Union.
29. **Paolo Cortazar**, last of Thoth station brain-altered Nanoinformatics, goes on to run 'the pit' on Laconia. {misunderstood?}
30. **S2, Roberta 'Bobbie' W. Draper**, only considered a villain by those she has to fight, trying to do what's right.
31. **Surly Belter Crewman**, & all others that deliberately space all 'Inners' on "Ganymede Refugee Ship".
32. **Captain Martens**, MCRN chaplain OK with sacrificing Marine squads to test *Hybrid* soldier (Project Caliban field test).
33. **Staz & Edin**, OPA thugs that decide to lead a violent overthrow of Johnson on Tycho, including murder in cold-blood.
34. **Dr. Lawrence Strickland**, revels in sacrificing children & turning them into Protomolecule soldiers.
35. **Lydia Maalouf Allen**, substitute mother & lover to **Amos**, who was a Baltimore criminal as well.
36. **Pyotr Korshunov**, Martian Minister of Defense that's OK with sacrificing Marine squads to test Protomolecule Tech.
37. **Head Cop, Flunky Cop, & Stunt Cop #3**, Ganymede thugs trying to steal The Weeping Somnambulist.
38. **Roma**, Ganymede thug exploiting the disaster to take advantage of desperate survivors.
39. **Umea**, just as morally bankrupt as her boss, Strickland, sacrificing children & turning them into Bioweapons.
40. **Captain Malik, JPM Bodyguard**, & all Mao's murderous thugs on the Guanshiyin (Mao's yacht).
41. **S3, Pilot**, another of Mao's murderous thugs on the Guanshiyin (Mao's yacht).
42. **Medical Tech**, just as morally bankrupt as her boss on Io, Strickland, converting children into Bioweapons.
43. **Katoa**, under protomolecule's guidance, dismantling a Medical Tech with his bare hands.
44. **Lt. Boyer**, stereotypical "I was just following orders" stooge of Admiral Nguyen.
45. **Evita Jung**, the heartless harlot that broke the heart of desperate slingshot pilot, **Maneo Jung-Espanoza**.
46. **Videographer Elio 'Cohen' Casti**, paid to sabotage the *Rocinante* without knowing WTF he's doing.
47. **Belter #1 (Dealer)**, selling drugs to workers on the *O.P.A.S. BEHEMOTH*, leading to death of the **Buyer**.
48. **Commander Klaes Ashford**, OPA pirate who makes some bad bull-headed decisions almost wiping out humanity.
49. **Clarissa Mao (Melba Koh)**, hell-bent of revenge against Holden for her father, using murder of friends & terrorism.
50. **S4, Dr. Lucia Mazur**, *Ilus* settler driven by desperation to plant explosives that kill 23 trying to land there.
51. **Leelee**, small criminal with no qualms about deaths or consequences of their activities.
52. **Belter Pirate**, just another thug ready to prey on the desperately vulnerable colonists.
53. **Chief Adolphus Murtry**, sociopathic/sadistic RCE-corp security chief that justifies & enjoys cold-blooded murder.
54. **Chandra Wei**, RCE security guard foolish enough to follow **Murtry** even to the point of being willing to shoot **Amos**.
55. **Scotty**, *Ilus* settler happy to kill Earthers in shuttle and shoot anyone that tries to remove them.
56. **Coop**, *Ilus* settler happy to kill Earthers in shuttle and provokes Murtry until he gets shot dead.
57. **David Draper**, teenager duped into making "focus drugs" for Martian Cop & low-level Crime boss, **Esai**.
58. **Detective Esai Martin**, Martian Cop & low-level Crime boss with flexible morals beyond his family life.
59. **Kellan**, *Ilus* settler happy to kill Earthers in shuttle and shoot anyone that tries to remove them.
60. **Dock Foreman**, wants Bobbie to continue criminal salvage as long as he gets a cut & turns Bobbie in when she quits.
61. **Marco Inaros**, pawn of Admiral Duarte happy to bomb billions of Earthers to death & many other crimes. {Bob's least}
62. **Black Sky Leader, Primo Arriaga, Segundo Arriaga, Matar Kibileya Leader, & Golden Bough Leader** (OPA).
63. **Angeletti**, *Ilus* settler desperate enough to lead others to take RCE guards hostage.
64. **Fence & Shady Dude**, wanted to cheat **Esai** from payment for latest crime S4 E4, but **Bobbie** intervened.
65. **Beltran**, just another expendable ex-MCRN criminal in Duarte's web of treason.
66. **Security Officer**, on the *Edward Israel*, who implements **Murtry**'s shuttle bomb vs the *Rocinante*.
67. **Arum Lee**, just another expendable ex-MCRN supply officer criminal in **Duarte**'s web of treason.
68. **Filip Inaros**, willingly follows psychopathic dad almost until the very end, including mass murder.
 - a. His defection from *Free Navy* much better in book 6, with him staying behind on Callisto as Phillip Nagata.
69. **S5, Karal**, asshole **Marcos** follower, happy to murder & do anything in her fanatical devotion.
70. **Cyn**, old **Marcos** follower, does almost anything he says, even hiding baby **Filip** from **Naomi**.
71. **Andrew**, just another expendable **Marcos** follower, dies while taking out the U.N.S. *Hasami*, science ship near Venus.
72. **Sakai**, Tycho chief engineer working to sabotage the *Rocinante*, shoot **Fred Johnson** in back, & aide in mass murder.

73. **Flunky Thug, Boss Thug** +2 on the *The Lazy Songbird*, Belter Ferry, En Route to Luna, cross Amos in a bad mood.
74. **Arms Trader**, selling Martian Power Armor on black market.
75. **UN Admiral Delgado**, wasn't going to list him originally, but he gives the worst advice to **Paster**, like nuking Pallas.
76. **Belter Pirate Captain**, just a pirate that attacks the *Sulaiman Al Mahri* colonist ship too close to **Drummer's crew**.
77. **Theo**, minor thug in Erich's crime organization.
78. **Admiral Sauveterre**, major MCRN officer black marketeer in **Duarte's** web of treason.
79. **Lt. Emily Babbage**, minor MCRN officer black marketeer and **Admiral Sauveterre's** spy in **Duarte's** web of treason.
80. **Erich**, major Baltimore crime boss and all his organization's thugs.
81. **Dock Tough**, minor Baltimore thug that's lucky he & his 3 buddies walked away from Amos.
82. **Galip & Rattana**, two minor Pallas bums that try to shake down **Naomi**.
83. **Tamir & Vedasto Duru**, 2 kidnappers of journalist **Monica Stuart**, also killed as expendable accessories.
84. **Woman in Hotel**, & male other former MCRN petty officer assassin sent to kill **Alex Kamal** on **Sauveterre's** orders.
85. **Konecheck**, psychopathic augmented-strength murderer.
86. **Survivalist**, attempted to kill **Amos** after striking a 'deal' with him, but **Clarissa** sweeps in at hyper-speed to kill him.
87. **Pella Crew #1 & #2**, just more expendable **Marcos** followers.
88. **David Paster**, not really a 'Villain'; just basically unfit to be UNN Secretary General & accepts bad advice.
89. **Hutch**, one of **Erich's** better lieutenants.
90. **Pinkwater Leader** of **ex-security thugs** that mistakenly try to shake down **Erich's** gang at Lake Winnepesaukee.
91. **S6, Rosenfeld Guoliang, Marcos's** right-hand, willing to do ANYthing, even mass murder of Ceres' Belters.
92. **Yoan, Filip's** foolish "Free Navy" big-mouthed thug-buddy, right up to the moment **Filip** shoots him dead.
93. **Liang Walker**, & his right-hand **Corrido**, Golden Bough pirates, who opportunistically ally with **Drummer**.
94. **Admiral Duarte**, mastermind of the MCRN defection to Laconia, **Marcos's** puppet master, & mass murderer. {Bob's #1}
95. **Tadeo**, just another expendable **Marcos's** follower, even setting the bombs on Ceres that end up killing his brother.
96. I DON'T include any of the following as 'Villains', since they're all beyond our human definition of that word.
 - a. **The Protomolecule**, just a tool following its programming, no real agency beyond its pre-determined goals.
 - b. **The Builders**, just expanding their collective civilization long before anything sentient existed on Earth.
 - c. **"The Goths"**, just pissed off extra-dimensional entities trying to stop invaders messing with their universe.
 - i. This term is coined by **Teresa Duarte** in book 8.

"Villains" from the books & novellas: (and not mentioned by name in the series)

1. **Bomie**, Ceres mid-level Golden Bough thug that got *disappeared* without retaliation; he didn't get named on show.
2. **"Huge shirtless man** was beating someone to death." Ceres Dock riot when CANT destruction revealed.
3. **Mateo Judd**, dock worker turned 'insurance' racketeer.
4. **Immanuel Corvus Dowd**, raped his employee, reference Security Incident CCS-4949231.
5. **"A smuggler** with a cargo of euphorics had broken with his supplier. Three people on Ceres had been caught in the crossfire, and the smuggler had shipped out for Eros." Miller & Sematimba collaborate outside channels to get him.
6. **Gabby Smalls**, Miller ID's him as a Ceres Golden Bough protection racket thug, drug dealer, & murderer in the stolen riot gear herding people for Stage 3 Eros Protomolecule experiment.
7. **Mikey Ko**, one of the ex-Ceres thugs hired to corral people on Eros.
8. **Mr. Dresden**, is thanked for Protogen's financial support of Phoebe research, 2 years before events in book.
9. **Jila Sorormaya**, remembered by **Miller** as performance artist who intentionally corrupted data storage devices and then put the data stream through her music kit, resulting in criminal confidential data sharing.
10. **B2, Umea**, woman with **Strickland** pretending to be Mei's mommy to abduct her.
11. **Captain Thorsson**, handles **Bobbie's** debriefing after Ganymede attack & "doesn't care if it kills her" to wake her.
12. **General Adiki-Sandoval**, exact role within UNN conspiracy was unclear.
13. **Soren Cottwald, Chrisjen Avasarala's** traitorous secretary that undermines her efforts until caught by **Bobbie**.
14. **Mr. Vedas**, Ganymede "customs inspector" + 2 thugs that try to shake down Holden's crew on
15. **Wendell**, Martian ex-Pinkerton security on Ganymede that gets hired by Holden instead of shaking him down.
 - a. +5 of his team: **Paula, 'older-guy', Guthrie, Caudel (dies), & Uchi**.
16. **Foster, Chrisjen Avasarala's** bribable Com-Tech who handles encryption for **Admiral Nguyen**.
17. **Ameer**, Intel guy for **Chrisjen Avasarala** in Atlanta.

18. **Ferguson, Mott, Sergeant Chernev** + at least a dozen other unnamed of UNN Covert Ops Ganymede strike team.
19. **Amanda Telele, Soren Cottwald**'s fake name for **Bobbie** as a 'free operative of the Martian Intelligence Service.'
20. **Nicola Mulko** (Mei's mom) & **Taban** (husband), paid to falsely publicly accuse Prax of being an abusive Father.
21. **Carlos Merrian, Dr. Lawrence Strickland**'s former name at Ceres Mining and Tech University.
22. **Ms. Emma Corlinowski**, coordinated UN smear campaign vs Prax.
23. **B3, Bull, Carlos c de Baca**, security chief & 3rd in command of the *Behemoth*, suggest mutiny vs **Ashford**, later dies taking out Martian power armor with hand grenades worn by Casimir while trying to retake control of *Behemoth*.
24. **Ashford**, serious asshole that almost wipes out Humanity with his insanely bad decisions commanding *Behemoth*.
25. **Michio Pa**, XO of the *Behemoth*, who initially backs **Ashford**, but eventually takes command out of necessity.
26. **Travin + 2 thugs**, who reneges on deal and **Clarissa** has to murder in order to get her **Melba** IDs.
27. **Nicholas (Nick) Trubachev**, Sophia's abusive husband. Anna confronts, tasers, & has him arrested to save Sophia.
28. **Cohen, Elio Casti**, Monica's corrupt blind soundman that sabotages Roci on way to Ring.
29. **Father Hank, Dr Hector Cortez**, televangelist to >100,000,000 streamcasters a week, goes Devil-crazy helping Ashford retake Behemoth, & tazers Ashford at last-second to save Clarissa's life.
30. **Alexi Myerson-Freud**, *pixie dust* drug-dealer nutritionist on *Behemoth* who Bull spaces on way to Ring.
31. **Garza**, one of **Bull**'s security team that turns traitor helping **Ashford** retake control of *Behemoth*.
32. **Jo-Jo**, one of **Bull**'s security team that turns traitor helping **Ashford** retake control of *Behemoth*.
33. **Casimir**, one of **Ashford**'s goons used to work for **Bull**, then fights in commandeered Martian Power Armor.
34. **B4, Beggar**, that tries & fails to hit up **Bobbie** with fake Ganymede Veteran story.
35. **Basia Merton, Baz** (Katoa's dad), *Ilus* terrorist sets shuttle-destroying explosives & follows **Coop**'s ambush.
36. **Coop**, ring leader of *Ilus* terrorists that destroy shuttle & ambush Royal Charter Energy (RCE) security team.
37. **Lucia Merton**, is NOT a terrorist in book, but keeps silent about their activities.
38. **Chief Adolphus Murtry**, severe RCE security chief that enjoys cold-blooded murder.
39. **Dmitri Havelock**, implements **Murtry**'s plan to turn 2nd shuttle into a bomb, train's the *Israel*'s militia, & eventually betrays his *Israel* shipmates, tazing, zip-tying, & eventually shooting them once siding with Naomi.
40. **Chandra Wei**, goes along with all of **Murtry**'s despicable actions, right up to her getting killed by her lover, **Amos**.
41. **The Investigator/Protomolecule's Miller**, flips ancient switches with no thought to consequences.
42. **Scotty, Peter, Loris** (jokes about mass murder), **Caterine, Ibrahim, & Zadie**, rest of **Coop**'s thugs.
43. **Hobart Reeve, Murtry**'s 2nd-in-command, until killed in ambush on *Ilus*.
44. **Chief Engineer Matthu Koenen**, racist Earther that picks 11 for *Israel*'s militia, promotes conspiracy that Holden is a protomolecule clone, & makes missiles leading to *Barb*'s destruction even when it looked like all were going to die.
45. **B5, Josie, Miral, Aaman, Niban, Andale, Andrew, & Chuchu**, Callisto raid thugs, last 2 sacrificed by **Filip** on 15 Bday.
46. **6 thugs**, on the *Lazy Songbird* Luna transport, that **Amos** vents his anger on.
47. **Rokku**, captain of 1st pirate boat **Marco** & **Naomi** ship on together.
48. **Erich**'s many minions: **Laci** (pixie dust girl), **Troy** ('Mountain' of a man Amos beats up), & **Tatu** (1 of bodyguards); later in book there's blonde **Butch, Scarf Boy, & Tyce**.
49. **4 Gunmen**, that had **Bobbie** tied to chair asking about **Alex**, when **Alex** walked in.
50. **Marco** minions: **Miral, Josie, Old Sandy, Wings/Alex, Souja** (**Karal**'s ex? wife), **Tia Margolis, Sarta, & Salo**, who recognizes **Alex**'s voice during 'Free Navy' assault on Martian Prime Minister's ship. + **Kennett + Jamil + Dina**.
51. **Cowboy Hat** & the rest of Pinkwater Rattlesnake Island thugs that get killed while Amos flees Earth.
52. **B6, Michio Pa's Connaught** (Free-Navy) spouses: **Evans Gurner-Choi, Oksana Busch, Josep, Nadia, Bertold, Laura**.
53. **Carmondy, Michio Pa's** non-spouse assault team leader, who stays loyal to **Marco** when **Michio** goes Pirate Queen.
54. **Zig Ochoa**, some Ceres OPA, but opposed to **Anderson Dawes**.
55. **Marco's inner-circle** members: **Rosenfeld Guoliang**, Production & Design; **Nico Sanjrani**, Finance; **Dawes; Michio Pa**.
56. **Bastien, Marco's** shuttle pilot. BIG Rail Gun installers **Salis, Roberts, Emil Jacquard Vandercaust**, & supervisor **Jakulski**.
57. Laconian *Proteus* **Captain Montemayor**, what happens to Proteus by end of Book 6?
58. **Levi Watts**, Capt of **Pa's** renegade *Munroe*, that pleads for life in vain when hunted down by **Marco's** Free Navy.

59. OPA leaders **Carlos Walker**, **Liang Goodfortune**, **Micah al-Dujaili**, & **Aimee Ostman** (more attacks on inner's military than other 3 combined), all called to Tycho by **Fred**, before he died.
60. **Ezio Rodriguez** & **Susanna Foyle** two of **Pa's** pirates. **Marco's Captain Lister** of *Coin Silver* & **Captain Chou** of *Lina*.
61. **Captain Christina Huang Samuels** (Free Navy political, surrenders Medina to Holden after Gate RailGuns destroyed) & **Jon Amash** (Medina Security), make joint announcement of execution of unnamed Tech for supposed treason.
62. **B7**, **Caton**, one of **Cortazar's** many Techs in *the Pen* on Laconia. **Dr. Ochida**, head of *the Pen*.
63. **High Consul Admiral Winston Duarte**, who injects Protomolecule to become the immortal emperor of humanity.
64. Transport Union Presidents: **Pa**, **Tjon**, **Walker**, **Sanjani**, **Drummer**.
65. Earth **Secretary General Li**.
66. **Payne Houston**, Governor of Freehold ammossexuals, tries to take over *Roci*.
67. **Emily Santos-Baca**, Transport Union Policy Coordinator, dies on *Void City Independence*.
68. **Ahmed McCahill**, chair of Transport Union security committee.
69. **Cameron Tur**, **Drummer's** science geek.
70. **Santiago Jilie Singh**, Capt of *Gathering Storm*, *Pulsar-class* Laconian DD, repeatedly screws up as Governor of *Medina*.
71. **Capt Iwasa**, defied strict Laconian Naval Code of Conduct & was sent to The Pen.
72. **Carrie Fisk**, ASSociation of Worlds Quisling collaborator with Laconia.
73. **Colonel Aliana Tanaka**, Laconian chief of security, likes to screw junior officers in violation of regulations.
 - a. Takes on the role of LoTR's Gollum, a twisted soul who's frantic violence at the end of B9 allows victory.
74. **Major Overstreet**, takes **Tanaka's** place after she's dismissed by **Singh**.
75. **Admiral Anton Trejo**, commanding *Heart of the Tempest*, Laconian Magnetar-class BC/BB.
 - a. **Rear Admiral Jae-Eun Song**, commanding *Eye of the Typhoon* defending Laconia, then deployed to *Medina*.
 - b. *Voice of the Whirlwind* still being grown.
76. **Onni Langstiver**, ex-head of Medina security, tries to collaborate with **Singh**, then leads suicidal attack after rejected.
77. **Daphne Kohl**, Tech in charge of *Medina* when conquered, purges all DBs to hinder Laconians.
78. Earth-Mars Coalition(EMC): **Benedito Lafflin** liaison to **Drummer**, **Admiral Gloria Hu**, Undersec of Exec Affairs **Vanegas**.
79. **Saba**, **Drummer's** husband, leads resistance on *Medina*, his 2nd **Nanda**, his aid **Kara**, his decryption Tech **Maha**.
80. **Ramez**, *Medina* OPA Tech. **Nutter** OPA knife guy. **Katria Mendez**, OPA Voltaire Collective bomber.
 - a. **Jordao**, **Katria's** 2nd, that turns traitor collaborator with **Singh**.
81. **Albin Nazari**, **Drummer's** VP. **Col. Fernand Massey**, last EMC Cmdr of *Arcadia Rose* in *Tempest's* slaughter of EMC.
82. **Davenport**, Laconian XO that allows the *Storm* to be captured by **Bobbie**.
83. **Capt. Rowman Perkins**, Laconian Protector-Class DD *Stover* escort/occupier of **Drummer's People's Home** void city.
84. **Teresa Angelica Maria Blanquita Li y Duarte**, daughter of High Consul, **Timothy's** friend,
85. **Col. Ilich**, **Teresa's** tutor. **Kelly**, **Duarte's** personal valet.
86. **B8**, **Major Dr. Elvi Okoye**, husband **Fayez**, physicist **Jen Lively**, all on *Falcon*, the fastest Science ship in history.
87. **Admiral Mohmat Sagale**, military commander of *Falcon*.
88. **Wilhelm Walker**, #3 of the Underground.
89. **Caspar Asoau**, **Alex's** co-pilot on *Storm*.
90. **Bobbie's** strike team: **Jillian Houston** (2nd), **Takeshi Oba**, **Hernandez**, **Orm**, **Chama**, & some unnamed.
 - a. Later in book: **Timon Coul**, **Liese Chou**, **Denise Lu**, **Skaldi Austen-Bey**, **Ian Freeman**.
91. **Rini Glaudin**, ex-Voltaire Collective physicist on **Bobbie's Storm**.
92. **Mark & Kahho**, **Holden's** Laconian Censors.
93. *Bhikaji Cama* freighter: **Emma Zormoradi** security op in **Naomi's** shell game. Chief Engineer **Chuck** covers for **Naomi**, **Capt Burnham**, just wants **Naomi** off ASAP.
94. **Chava Lombaugh**, former *Roci* pilot & **Naomi's** "Whimsy Enterprises" company host in Auberon system.
95. **Vice Admiral Hogan**, takes *Tempest* control when **Trejo** recalled to Laconia.
96. **Admiral Sandrine Gujarat**, of the *Whirlwind*.
97. New *Roci* Recruits: **Belinda Ross**, **Acacia Kindermann**, **Ian Kefilwe**, **Jona Lee**, & Engineer **Safwan Cork**.
98. **Capt Kennedy Wu**, of Laconian DD *Rising Shamal*.

99. **B9**, Laconians: **Corporal Tristan Reeves**, **Tanaka**'s illegal sex partner. **Lieutenant Sanchez** of Scheduling & Logistics, **Admiral Milan**, **Lieutenant Rossif** of Signals Intelligence.
100. On *Falcon*: **Dr Harshaan Lee**, **Elvi**'s 2nd in command, **Quinn de Bodard**, another scientist.
101. **Capt Noel Mugabo**, of Laconian DD *Sparrowhawk*.
102. **Galwan ud-Din**, Laconian senior researcher in extrapolative physics.
103. **David Trujillo**, Laconian physicist describing alternative Universe time effects.
104. **Capt Botton**, of DD *Rising Derecho*, stereotypically willing to implement any atrocity for the 'good' of Laconia.
105. **Jillian Houston**, Capt of *Storm*, ignores **Naomi**'s decision & stupidly accepts **Trejo**'s 'alliance' offer for **Teresa**.
106. **Lt JG Kim Randall**, bartending on *Gewitter Station*, refuses **Tanaka**'s sexual advances due to her face damage.
107. **Major Ahmadi**, **Tanaka**'s trauma specialist on *Gewitter*. Doesn't believe mental invasion until it happens to her.
108. **Gregor Shapiro**, Underground's SME on *Ganymede* working on protomolecule's non-local signaling protocols.
109. **Emilia Bell-Cavat**, Underground's secret New Greece system coordinator & SME on non-insect superorganisms.
110. **Kachela al-Din**, Underground's SME working on direct brain-to-brain communication & ship designer.
111. **Lt DeCaamp**, security detail lead of DD *Rising Derecho*.
112. **Drive**, just **Solomon Epstein**, from Earth's POV, for inventing the "paradigm shifting" fusion drive for Mars.
113. **The Churn**, 1st **Mr. Amos Burton**, Baltimore crime boss of couple hundred thugs + ~1000 "professional victims".
114. **Mr. Burton**'s, Lieutenants: **Feivel Oestra**, **Liev Andropoulous**, **Tanner Ford**, **Stacey Li**, **Cutbreath**, **Mikel 'Batman' Chanduri**, **Cyrano**, **Simonson**, **Little Cole**, & the **Ragman**.
115. *Loca Griega* that died in the Baltimore Churn: **Eduard Hopkins**, **Jehona Dzurban**, plus other unnamed ones.
116. Other Baltimore Crime Bosses: **Tamara Sluydan**, **Baasen Tagniczen**, plus other unnamed ones.
117. **The Butcher of Anderson Station**, **General Jasira**, ordered Johnson's assault after the Belters has surrendered.
118. **Captain Santiago**, the Psych Ops commander ordered to stop negotiations with the Belters by **General Jasira**.
119. **Marama Brown**, freelance mining technician turned leader of the Belter revolt on Anderson Station.
120. **Gustav Marconi**, administrator of Anderson Station that gets spaced after +3% surcharge on supply transfers.
121. **Origin 1, Holden**, **Captain Maslow UNN Zwang Fei**, gives order to fire on unknown Belter ship carrying refugees.
122. **Commander Doran, Holden** tries to punch him while disobeying order to fire on unknown Belter ship.
123. **Origin 2, Naomi, Fen**, *Cant*'s previous incompetent mechanic that goes out of way to get on **Amos**' bad side.
124. **Origin 3, Alex**, no 'villains' to add.
125. **Origin 4, Amos, Captain Jodi**, from **Amos**' surreal dream, famous for stealing from Inners & giving to Belters.
126. **The Last Flight of the Cassandra**, no 'villains' to add, just Capt Darius perhaps wisely deciding to NOT tempt fate.
127. **The Gods of Risk, Hutch**, the drug crime boss running stupid self-centered **David Draper**'s criminal side-life.
128. **The Vital Abyss**, 37 surviving Thoth prisoners being held by Belters on a 0.25 g station: **Van Ark & Drexler** from Maintenance; **Fong** from Security; **Ernz & Ma** from Signaling & Communications; **Kanter, Jones, Mellin, Hardberger, & Combs** from Imaging; **Quintana, Brown, & Cortizar** from *Research*; **Alberto Correa** from Admin (**Cortizar**'s lover).
129. **The Martian (Admiral Winston Duarte)**, setting up a *Hunger Games* like competition to select 1 *Researcher*.
130. More Protogen **Researchers**: **Owsley** chemical signaling; **Arbrecht** modeling; **Trinh & Le** nanoinformatics; **Bouthers**; **Althea Ecco**; **Lodge**; **Kenzi**; **Yacobsen**; **Al-Farmi**; **Singh** computational biology, who beats **Kibushi** to death.
131. **Comics 1-4, Bobbie**'s friend **Kal**, part of **Duarte**'s organization to recruit/abduct people for Laconia.
132. **Lance Slavitt**, embezzled funds from **Avasarala** Luna work before quitting to join Laconian workforce.
133. Justin Whitely, Belter technician **Avasarala** is talking to when she's surprised by **Luna Thug** that breaks in.
134. Unnamed **Luna Thug** part of **Duarte**'s organization that breaks into **Avasarala**'s residence & threatens her.
135. **Jebyn Cartner** delivery guy that walks with **Avasarala** while evading thug on Luna.
136. **Strange Dogs**, the **Drunk Soldier** truck driver that killed **Xan & Cara**, for stealing her brother's body.
137. **Dragon Tooth Issues 1-12, Cmdr Dhillon/Sohiro** (MCRN *Tanto* disguised as belter *Camorri Garrista*)/**Mulligan**, ruthless MCRN black ops that gets left behind by **Duarte** & implements his own murderous decades-long plots.
138. Chief Engineer **EVELyn Mayes**, **Dhillon**'s agent on Ice Hauler *Arizona Bay*, **Elvi**'s comm station, & *Medina*.
139. **Lev Molina**, **Dhillon**'s agent tries to sabotage *Roci* docked at *Medina*, **Amos** catches & kills him.
140. Dr Petyr Cherniv, **Elvi**'s higher-dimensional spacetime manifolds SME that gets murdered.

141. **Cadie 'Rook' Cole**, **Dhillon**'s agent posing as junior recycling tech until killed as a loose end by **Mulligan**.
142. **Steeplejack**, code name of **Avasarala**'s deep cover asset within MCRN's fleet command.
143. **Auberon**, the old man with the super prosthetic arm, **Erich**, crime boss of Auberon & his 2nd **Agnete**.
144. **Governor Biryar Rittenaur**, 1st Laconian Governor of Auberon & his wife who redirects science funding, **Mona**.
145. Auberon officials: Michelle Cheval, Pres of Agricultural & Food Production Union; Augustin Balecheck, deputy minister of planetary transportation security; Suyet Klinger, Association of Worlds representative; Arran Glust-Hart, Association of Worlds forensic accountant; Devi Ortiz, minister of education.
146. **Major Overstreet**, Laconian head of security on DD *Notus*, reassigned after killing **Governor Singh** on Medina.
147. **Dr Carmichael**, appeals to **Mona** to get her amino acid array translation research re-funded at Xi-Tamyran campus.
148. **Veronica Dietz**, **Mona**'s liaison with all Xi-Tamyran work groups, embezzling funds from them all.
149. **Dr Grover Balakrishnan**, leader of rival less-promising microbiota compatibility Xi-Tamyran work group.
150. Unnamed **Laconian Ensign**, executed for provided pharmaceutical printer & 2 boxes of reagents to drug dealers.
151. **Lara Kasten** (previously **Karkara**), Auberon interviewer that almost seduces **Governor Biryar Rittenaur**.
152. **The Sins of our Fathers**, **Filip Nagata**'s aliases: Oskar Daksan, Tyr Saint, Angel Morella.
153. **Leward**, Science lead of *Beta* 2nd largest outpost of 436 people on *Jannah*. No contact with *Alpha* during story.
154. **AleJandro**, big head of *Beta* construction & maintenance team that decides to bully others to do what he wants.
 - a. **Alyn** (taller) & **Yuri** (shorter), two of **Jandro**'s work team goons.
155. **Mose**, **Filip**'s Union supervisor in complete denial that the Union no longer matters now that the gates are gone.
156. **Nami Veh**, Administrator at *Beta* that kind of ends up in overall leadership role.
157. Other non-villainous *Beta* names: Evelyn Albert, Kofi (**Filip**'s buddy), Arkady Jones, Adiyah, Jon Lee, Jackson, Cameron, Eric Tannhauser, Mina Njoku, Muhammed Klein, Merton, Diecisiete (3rd Power Tech, at *Alpha*, not *Beta*).

*** Previous notes for The Expanse panels ***

1. **Summary:** Vision of 23rd Century political competition (between Earth, Mars, and the Belt), personal struggles (dozens of characters), and chilling science-fiction thrills beautifully and plausibly presented.
 - a. There's only 2 "suspension of disbelief" required of the viewers: (1) a super-efficient fusion "**Epstein Drive**" which makes traversing the solar system easy, & (2) an extra-solar **Protomolecule** (this show's magical Tech).
 - i. The SUPER efficient "recyclers", which all food leftovers, utensils, clothes, etc. get put into are very problematic, but given 2 centuries & the extreme need, then *maybe* they might be possible?
 - b. Everything else about the show, from the visuals to the ship travel times, is Technologically Spot On!
 - i. For me, it's The Expanse's scientific accuracy that makes my "Inner Engineer" VERY HAPPY!
 - ii. Finally, a show that gets space acceleration right & need to flip-&burn half-way to slow back down!
 - iii. Examples of extreme detail include the retro-engines on all PDCs to counteract the gun's recoil.
 - c. The depth of the believable characters is also excellent, with story lines that make sense, and interactions and development that makes the audience actually care about them.
 - d. Epic story arcs embracing humanity's future told in a way that doesn't insult the viewer's intelligence.
 - e. The world-building is 1st rate. The geopolitics, cultures, and norms are there for you to absorb if you want to, but not spoon-fed to the audience as if every aspect of daily life needs to be explicitly spoken out loud.
 - f. No show is perfect: S2E1, no way 5 Martian torps fly right next to an UNN BB w/o PDCs being fired at them!
 - i. S3E10, NO way that Naomi or Clarissa would have ANY chance of reaching the Roci before Martians!
 - ii. S5E5, *Razorback* does *Emergency Core Dump* fleeing from *Free Navy*, how does it have engine in E6?!
 - iii. S6E2, Ludicrous that *Azure Dragon* NOT have sensors in ALL directions! Its intercept scene is worse!
2. **Weapons:** Directed-energy weapons are minimal & lasers are mainly used in their inertial confinement fusion power.
 - a. **Percussion Guns** are still the standard used for personal combat, plus mini-rockets for powered armor.
 - b. **Missiles (Torpedoes)** are used on spacecraft of all sizes, up to interplanetary bombardment nukes.
 - c. **Point Defense Cannon (PDC)** are used for anti-missile defense & close-quarters ship combat, speed unknown.
 - d. **Railguns**, Laconian railguns on the ring station fire projectiles 30-50K km/s, faster than any other then.
 - i. These projectiles far exceed Sol's MAX 618 km/s escape velocity (near Saturn it's only 13.6 km/s).

- ii. Most PDC & Railgun rounds will leave our Solar System, unless they hit enough to slow WAY down.
3. **Impacts:** Authors [Daniel Abraham](#) & [Ty Franck](#) (aka [James S. A. Corey](#)), set Sci-Fi-standards MUCH HIGHER for fans.
 - a. Very useful fan reference: https://expansion.fandom.com/wiki/The_Expansion_Wiki
4. **Sequence:** 9 Novels + 9 Novellas + 5 Origins + 4 Comic Issues: Expanding the expansion of “The Expansion” every time.
 - i. [Drive](#), 2012/11/27, 20 pages, 57m, Solomon Epstein’s invention of a super-efficient fusion drive.
 - ii. [The Churn](#), 2014/04/29, 75 pages, 2h 18m, Amos’ (Timothy) Baltimore backstory.
 - iii. [The Butcher of Anderson Station](#), 2011/10/17, 40 pages, 61m, Fred Johnson’s military backstory.
 - iv. [Origins 1](#) James Holden 2017/02/01, 29 pages, Jim discharged for disobeying order to fire on Belters.
 - v. [Origins 2](#) Naomi Nagata 2017/04/19, 28 pages, Naomi starts her healing on Cant with Amos’ help.
 - vi. [Origins 3](#) Alex Kamal 2017/05/17, 22 pages, Retires from MCRN, but rather fly than be a family man.
 - vii. [Origins 4](#) Amos Burton 2017/07/12, 27 pages, Weird psychedelic game-show mental remembrances.
 - viii. [5](#) Josephus Miller 2017/??/??, 23 pages, “It’s hard to hold onto the light ... when we live in the dark.”
 - b. [Leviathan Wakes](#), 2011/06/15, 561 pages, 20h 56m, The Expansion is for control of our entire Solar System.
 - i. [The Last Flight of the Cassandra](#), 2019/05/14, 5 pages, no audio, mystery on ATEN Xi-Mallow 434.
 - c. [Caliban’s War](#), 2012/06/25, 595 pages, 21 h, The War is for control of life-changing *Protomolecule* Tech.
 - i. [Gods of Risk](#), 2012/09/15, 75 pages, 2h 20m, story of 16-yr-old David Draper’s drug-making career.
 - d. [Abaddon’s Gate](#), 2013/06/04, 539 pages, 19h 42m, The Expansion is expanded to 1372 other solar systems.
 - i. [The Vital Abyss](#), 2015/10/15, 74 pages, 2h 26m, story from scientist Cortazar’s perspective.
 - e. [Cibola Burn](#), 2014/06/17, 583 pages, 20h 7m, the new threat is whatever destroyed the Ring Builders.
 - i. [Comic Issue 1](#) 2020/12/16, 26 pages, Chrisjen continues to put duty over family as petty bureaucrat
 - ii. [Comic Issue 2](#) 2021/01/20, 26 pages, on Luna as Bobbie dodges bullets as petty arms dealer/spy on
 - iii. [Comic Issue 3](#) 2021/02/17, 26 pages, Mars. Laconia tries to recruit both, but they evade near-death
 - iv. [Comic Issue 4](#) 2021/03/17, 32 pages, experiences to expose the “slave trade” going thru the Rings.
 - f. [Nemesis Games](#), 2015/06/02, 544 pages, 16h 44m, Millions die on Earth to Marco’s stealth rock attacks.
 - g. [Babylon’s Ashes](#), 2016/12/06, 608 pages, 19h 58m, Marco’s war ends as Admiral Duarte sets up on Laconia.
 - i. [Strange Dogs](#), 2017/07/18, 64 pages, 2h 29m, Laconia has many mysteries, this is a big one.
 - ii. [The Expansion: Dragon Tooth Issue #1 – 12](#), 2023/04/19-2024/05/29, spanning the decades between novels 6 & 7, the black ops *Dragon Teeth* agents that got left behind by Duarte plot, infiltrate, & kill in Laconia’s name, including using data from the International Astronomical Survey Group (IASG).
 1. Author Andy Diggle puts a 10 year jump at the start of [#5](#) & [#9](#).
 2. [#9](#) finally discusses that objects passing thru from the far side of a ring towards the sun simply go straight thru, but if an object is transiting from ring space at the exact same time & location, then it results in a “highly exothermic” event.
 - h. [Persepolis Rising](#), 2017/12/05, 560 pages, 20h 34m, *High Consul* Duarte conquers humanity easily.
 - i. [Auberon](#), 2019/11/12, 63 pages, 2h 25m, Erich now controls a colony world & resists Laconian rules.
 - ii. I like Auberon’s 4-hour rotation turned into a day-night-day 12-hr-day & night-day-night 12-hr-night.
 - i. [Tiamat’s Wrath](#), 2019/03/26, 544 pages, 19h 8m, fighting the Laconians & the ring entities retaliate too.
 - j. [Leviathan Falls](#), 2021/11/30, 528 pages, 40 m, the Laconian Empire ends & all ring gates are shut down.
 - i. [The Sins of Our Fathers](#), 2022/03/15, 64 pages, 2h 23m, Filip Nagata fights monsters on Jannah.
 - ii. [Memory’s Legion: The Complete Expansion Story Collection](#), 2022/03/15, 432 pages, 16h 22m.
5. **Main Characters:**
 - a. **Julie Mao**, rebellious rich girl, who joins the OPA to help the Belt, but becomes the catalyst of a disaster.
 - b. **Jim Holden**, idealistic ex-UNN Officer, who’s the lead character throughout The Expansion’s epic journey.
 - c. **Naomi Nagata**, Master of Engineering & Physics, former OPA, the conscience & empathy of the crew.
 - d. **Amos Burton**, murderous psychopath with a dark criminal history, he’s the muscle of the crew.
 - i. Is described as “scared shitless” of going into Roci’s cargo bay to attack Hybrid stowaway in book 2.
 - e. **Alex Kamal**, dutiful ex-Martian Navy, he pilot’s whatever’s needed, ‘til the series/books are done with him.
 - f. **Josephus Miller**, Star Helix cop that becomes obsessed with Julie Mao, and investigations in general.

- g. **Chrisjen Avasarala**, tough & ruthless Earther that will do whatever it takes for anything that needs doing.
- h. **Sec-Gen Gillis**, President of Earth until ousted by scandal with Errinwright's treason.
- i. **Sadavir Errinwright**, Earth traitor used by Jules-Pierre Mao to hurtle Earth towards war from within.
- j. **Jules-Pierre Mao**, beyond-rich mastermind of a war just to distract from his Protomolecule Tech quest.
- k. **Fred Johnson**, controversial Earther Colonel redeeming himself with service to the Belt commanding Tycho.
- l. **Anderson Dawes**, Belter OPA (Outer Planets Alliance) mob boss, pushing his agenda beyond any limits.
- m. **Bobbie Draper**, Honor bound to do whatever she can for Mars, usually by fighting others into submission.
- n. **Cotyar**, Chrisjen's spy recruit & bodyguard, efficiently ruthless, doing the right thing even in awful situations.
- o. **Admiral Souther**, UNN Fleet Commander at first, Commander of UNN Jupiter Fleet during battle at Io.
- p. **Admiral Nguyen**, Traitor UNN Fleet Commander during fleet fight at Io, working with Jules-Pierre Mao.
- q. **Camina Drummer**, capable & ruthless OPA Captain, who gets personally involved with the main characters.
- r. **Paolo Cortazar**, The only sociopath Protogen Protomolecule scientist that survives for multiple novels.
- s. **Praxidike Meng**, Ganymede botanist who gets crew's help desperately seeking his abducted daughter, **Mei**.
- t. **Lawrence Strickland**, Protogen mad-scientist who's eager to turn more kids into **Hybrid** Proto-soldiers.
- u. **Annushka Volovodov**, heart of gold pastor, used by Sec-Gen Gillis, & later key to humanity's survival.
- v. **Maneo Jung-Espanoza**, berserk slingshot belter meets a RAPID nasty end being 1st human to cross The Ring.
- w. **Klaes Ashford**, boisterous, bellicose, & often wrong old-timer Belter pirate with his own way of doing things.
- x. **Monica Stuart**, *Roci* interviewer, helps save Humanity in Ring Space crisis, discovers Proto+OPA connection.
- y. **Clarissa Melpomene Mao (Melba Alzbeta Koh & Peaches)**, vengeful daughter that plots Holden's downfall.
- z. **Tilly Fagan**, dilettante joy riding to the ring, recognizes Clarissa, & is killed for it.
- aa. **Dr Elvi Okoye**, excellent scientist, only other one to share Holden's Proto-connection, & VIP in last 3 books.
- bb. **Adolphus Murtry**, Homicidal security chief on *Ilus* from *UNN Edward Israel*, ends up jailed back on Earth.
- cc. **Dr Lucia**, Belter Med, accidental *Ilus* terrorist, beloved wife & mother, who just makes some bad decisions.
- dd. **Nancy Gao**, runs against Chrisjen to be voted in as Sec-Gen UNN, dies in 3rd Earth asteroid strike.
- ee. **Marco Inaros**, OPA terrorist who leads attacks on Earth, killing millions & devastating the environment.
- ff. **Filip Inaros**, son of Naomi Nagata & Marco Inaros, used to intermingle the Naomi & Marco story lines.
- gg. **Admiral Sauveterre**, working logistics (dirty OPA work) for Admiral Duarte before b4 eaten by Ring Entities.
- hh. **Erich**, Timmy's boyhood friend & Baltimore mob Boss, helps Amos escape Earth x2, & mob Boss on [Auberon](#).
- ii. **Konecheck**, Supermax prisoner w/ Superstrength & Min-Brain used to help escape the rubble of their prison.
- jj. **Cara**, child on Laconia, accidentally kills local 'bird', then deliberately brings her brother back to life.
- kk. **Xan**, Cara's brother, dies in accident, brought back to life by 'Strange Dogs' as a proto-human hybrid.
- ll. **Liang Walker**, "Intimidates Marco, Sexually", takes (TV) Michio off Drummer's hands, & kamikazes into *Pella*.
- mm. **Admiral Duarte**, master-mind behind everything in seasons 5+, consoles Cara s6e4.
- 6. **Season 1**: Syfy 2015/11/23-2016/02/02, 10 episodes, from rich introduction to Protomolecule disaster on Eros.
 - a. E1: **Dulcinea**: sets the tone by introducing the audience to the cultures and technology of the Solar System smoothly, thoroughly, without overwhelming narrative (like at the start of the 1984 Dune movie), and with just enough hooks to keep the viewers wanting more.
 - i. Scenes of Julie's ship being attacked & her mysterious scream of fear after she escapes.
 - ii. Political unrest on Ceres gives Belters' views on being exploited by Innereers (Earth & Mars).
 - iii. Explanation of Belters elongated features, intolerance of normal (1 G) gravity, etc.
 - iv. Air & Water are precious, with the Canterbury (~50 crew) mining Saturn's rings for ice.
 - v. Limbs can be regrown, but the best technology is reserved by the Innereers.
 - vi. Gravity is used as a means of torture on Earth for Belter prisoners.
 - vii. Beautifully accurate depiction of spacecraft maneuvering & high-G-adaptation crew 'juice'.
 - viii. Excellent zero-G scenes & magnetic boots use that limits the need for expensive zero-G scenes.
 - ix. Space Piracy, (Mars "only") Stealth Tech, and Nuclear Explosions, Oh My!
 - b. E2: **The Big Empty**: gets audience used to show technique of jumping back & forth through time.
 - i. Damage control is harrowing after space combat, Holden's crusader complex, & crew unrest.

- ii. How cell phones & cop apps have evolved, & the effects of low-G spin gravity on pouring alcohol.
- c. E3: **Remember the Cant**: more details on the political intrigue spanning the Solar System.
 - i. Brothels as language schools, for linguistics, body language, & cultural understanding.
 - ii. Martian militarism, single-mindedness, efficiency, & high tech (like their interrogation drug).
- d. E4: **CQB** (Close Quarter Battle): a plausible story for how our main characters get their own warship.
 - i. First detailed space combat example, showing superbly well-thought-out sequences.
 - 1. Full discussion of this (and many other space combats) can be found at [Axanar's](#) Star Fleet Tactical webcasts that come out on Saturday's at 10 pm (Eastern US).
 - 2. [Starfleet Tactical #72: NEBULOUS: Fleet Command](#) discusses an Expanse-like combat game.
 - ii. Foreshadowing the events ("I worry about people throwing rocks.") in Season 5.
 - iii. Underworld of "Slingshot Clubs", and a pervasive life-is-cheap attitude for most people.
 - iv. Tycho Station building the 1st interstellar generation ship, The Nauvoo, for the Mormons.
- e. E5: **Back to the Butcher**: Fred Johnson's backstory, investigations, & general plot-line development.
- f. E6: **Rock Bottom**: Revelations, new beginnings, betrayals, sacrifice, & vengeance.
 - i. The lives and desperation of rock-hoppers (small-time asteroid miners).
 - ii. 1st instance of you-can-survive-exposure-to-vacuum in the show.
- g. E7: **Windmills**: the sometimes-it's-beneficial-to-NOT-kill-a-captured-spy-on-sight episode.
- h. E8: **Salvage**: provides some answers to earlier mysteries & adds questions about the creepy Protomolecule.
- i. E9: **Critical Mass**: Julie's mission sequence of events, all the way to Eros' use as a Protomolecule experiment.
- j. E10: **Leviathan Wakes**: the struggle to get off Eros, as it becomes a death trap for everyone there.
 - i. Naomi reveals more of her OPA-insider info to help crew find their way back to Rocinante's dock.
- 7. **Season 2**: Syfy 2017/02/01-04/19, 13 episodes, from Eros to System-wide war, & Venus Protomolecule eats 2 ships.
 - a. E1: **Safe**: The slip towards Solar-System-wide war continues as people on the Rocinante try to avoid it.
 - i. Intro of *Gunny* Bobbie Draper, Martian Marine's fighting techniques, & **improbable arm-wrestling**.
 - ii. Crew discovers they have a Protomolecule sample & Naomi disagrees about destroying it.
 - iii. 1st romantic encounter between Jim & Naomi.
 - iv. VERY odd graphic of **5 Martian missiles streaking by UNN ship without being fired on by its PDCs!**
 - v. **Nuked Phoebe moon would have taken YEARS to "spiral into Saturn" & be "completely gone."**
 - vi. Nice futuristic "personal cultural touch" like "Teddy The Detector" kids' reference.
 - b. E2: **Doors & Corners**: regroup at Tycho, taking over a Protogen station, & capture of scientist Cortazar.
 - c. E3: **Static**: Deimos is nuked by Earth, unease on Tycho, Eros *music*, & Amos *empathizes* with Cortazar.
 - d. E4: **Godspeed**: the plan to use the Nauvoo to bump Eros into Sun, with gorgeous visuals, even when it fails.
 - e. E5: **Home**: the most exciting chase sequence in The Expanse, with many consequences to resolve later.
 - i. Hints at all the weird physics-breaking the Protomolecule is capable of, and more.
 - ii. Well-acted 2-second delay video-call between Chrisjen on Earth & Arjun on Luna.
 - iii. Perhaps the most weirdly wonderful romantic scene I've ever seen between 2 actors.
 - f. E6: **Paradigm Shift**: Invention of The Epstein Drive, Fred's got 29 big-nuke missiles, & Ganymede combat.
 - i. "Mars Colony, 137 Years Ago", "Mars had been a colony for a long time",
 - ii. Holden's big "reveal" of being with Naomi ever since Eros to Amos & Alex, LOL!
 - iii. Naomi betrays her crew & secretly does NOT send their Protomolecule torpedo into Sun as agreed.
 - iv. One of the most epic vengeful speeches given by Chrisjen & her marvelous acting to match!
 - v. **33:30 scene, Roci should NOT be docked at Tycho THAT way, or crew would be walking on walls!**
 - g. E7: **The Seventh Man**: Bobbie's PTSD, Ganymede crises, Amos introspection, Belter politics, Cortazar taken.
 - h. E8: **Pyre**: Prax's storyline begins, Naomi's betrayal guilt, & Belter's try to take & launch Fred's missiles.
 - i. E9: **The Weeping Somnambulist**: Holden hijacks a freighter, Bobbie on Earth for Peace talks, Venus science.
 - j. E10: **Cascade**: Ganymede's decay, Bobbie goes sightseeing to the ocean, & Prax gives Amos Botany lessons.
 - k. E11: **Here There Be Dragons**: On Mei's trail, studying Venus, Bobbie seeks asylum, a Proto-soldier gets loose.
 - l. E12: **The Monster and the Rocket**: Holden has to break off his hunt to save Naomi, Chrisjen flies into a trap.

- i. Errinwright's the monster, looks like he's about to lose everything, so HTF did he weasel out of that?
 - ii. **Holden's bluster about threatening EVERY warship over Ganymede seems weak**, but entertaining!
- m. E13: **Caliban's War**: Chrisjen & the Roci are in trouble, UNN & Mars warships at war, & Venus terminal dive.
 - i. Naomi admits to giving their Protomolecule sample to Fred Johnson while on the Somnambulist.
- 8. **Season 3**: Syfy 2018/04/11-06/27, 13 episodes, Protomolecule's journey from Venus to Ring Space to other worlds.
 - a. E1: **Fight or Flight**: Space battles, freaking out about Venus, Naomi in dog house, Bobbie piloting Razorback.
 - i. **Bobbie's improbable journey up the ship TWICE to open access to Razorback as missiles approach**.
 - b. E2: **IFF**: Mei on Io, Bobbie explains *Hammerlock* racing for their lives, *Pinus Contorta* to Io, Anna joins story.
 - i. Bobbie's IFF was clever from many POVs, joining Julie's, the crew's, Chrisjen's, & her story together.
 - ii. Fantastic surprise rescue, visuals, & details of the *Pinus Contorta* "punching above our weight".
 - c. E3: **Assured Destruction**: Cotyar & Nguyen on *Agatha King*, Failure taking out all 5 Mars' 1st-strike platforms.
 - d. E4: **Reload**: Drummer salvages *L.D.S.S. Nauvoo*, crew salvages *Kittur Chennamma* & 3 survivors, Anna's used.
 - e. E5: **Triple Point**: Chrisjen's message gets thru, Roci at Io, Nguyen starts UNN civil war & launches *Hybrids*.
 - f. E6: **Immolation**: Io fight, *AgathaKing* fight, Errinwright arrested, Mei rescued, Mao captured, Strickland dies.
 - i. Amos is Prax's "Best Friend in the Whole World", Naomi's idea to use Fred's missiles to stop *Hybrids*. Venus Jellyfish.
 - g. E7: **Delta-V**: Chrisjen chooses peace as Sec-Gen, Ring forms, Klaes Ashford on *Behemoth*, Maneo goes splat.
 - i. Holden quotes "Better Lucky Than Good", *Melba* enters with sabotage & murder, Miller re-arrives.
 - h. E8: **It Reaches Out**: Melba's brutality, Amos notices Holden's 35 Med Scans, Roci races into Ring's 5000m/s limit.
 - i. E9: **Intransigence**: *Behemoth's* issues, Weird Ring Space, Mao family, Naomi returning, & Holden to Nucleus.
 - j. E10: **Dandelion Sky**: Miller guides Holden inside Nucleus, UNN into Ring, Mars grenade → 28m/s speed limit!
 - i. It makes **NO sense that Naomi or Clarissa would have ANY chance of reaching the Roci B4 Martians!**
 - k. E11: **Fallen World**: Bobbie gets Holden, Naomi on Roci, murderous Mao thwarted by Anna, *Spin The Drum!*
 - l. E12: **Congregation**: Mao chemically chained, next to Holden! All on *Behemoth*, triggering the Nucleus badly.
 - m. E13: **Abaddon's Gate**: Drummer vs Ashford, who wants to Laser the Ring, Anna & Monica help save all.
 - i. Epic climax with opening of gates to 1372 other solar systems & Miller saying "Gonna need a ride."
- 9. **Season 4**: Amazon Prime all on 2019/12/13, 10 episodes, from 1st Ring planet settlers to *galaxy-spanning civilization*.
 - a. E1: **New Terra**: Ring Blockade failure, Holden on Earth, Roci's Railgun, Bobbie's scrap work & family life.
 - i. Ashford policing pirates, Naomi's painful high-G treatments, Belter/UNN/Roci/Proto drama on *Ilus IV*.
 - b. E2: **Jetsam**: Millers flipping switches, Chrisjen on Mars, *Ilus* ruins 1.5 billion yrs old, Bobbie saving Nephew.
 - c. E3: **Subduction**: Murderous Murtry, Miller's Lightning, Bobbie works for Mars mob cop, *Ilus*quake machine.
 - d. E4: **Retrograde**: Naomi & Dr Lucia flee to Roci & to orbit, Chrisjen's politics, Bobbie's fall, Marcos 1st scenes.
 - i. Holden stupidly let Murtry know Lucia's w/Nagata, Drummer let Marcos go, Holden punches Murtry
 - e. E5: **Oppressor**: Flashback to Lucia's pad bomb, *Ilus* drama, UNN Election, test of Sentinel 19, BIG *Ilus* BOOM!
 - f. E6: **Displacement**: *Ilus* evac, 50,000 ExaJoules, Fusion stops, Bobbie's thug life, moon melts, Plan C to ruins.
 - g. E7: **A Shot In The Dark**: *Ilus* blindness & death slugs, *Barb* orbital decay, UNNElection prep, *Pizzouza's* boom.
 - h. E8: **The One-Eyed Man**: Drummer quits, Holden TIRED, *Roci* tugboat, Bobbie suspicious, ruthless Chrisjen.
 - i. E9: **Saeculum**: Miller's torment, Murtry, Wei, Amos & Elvi follow Holden, shuttle attacks *Roci*, Angry *GodEye*.
 - j. E10: **Cibola Burn**: Elvi's vision, Klaes vs Marcos, Bobbie finds Protogen/Mars/OPA connection, Chrisjen loses.
- 10. **Season 5**: Amazon Prime 2020/12/16-2021/02/03, 10 episodes, from Stealth Rocks to Peaches a part of *Roci* crew.
 - a. E1: **Exodus**: *Rock #9* & *Hasami* destroyed, Naomi → Filip, Amos → Earth, Alex → Mars, Monica, Bobbie spy angry.
 - b. E2: **Churn**: Pirate Drummer, Baltimore, Monica abducted & rescued, Bobbie recruits Alex, Amos visits Erich.
 - c. E3: **Mother**: Chrisjen's Intel ignored, Drummer reclaims *Tynan*, Alex rolled, Filip abducts Naomi, *Rock #1* hits.
 - d. E4: **Gaugamela**: *Razorback* tracks *Barkeith*, Amos → Peaches, Gao dies, Protosample taken, Naomi → Marcos.
 - e. E5: **Down and Out**: Drummer → Marcos, Amos & Peaches escape prison, *Roci* sabotage fail, *Razorback* fleeing.
 - i. *Razorback* does "Emergency Core Dump" fleeing from *Free Navy*, **how does it have an engine in E6?!**
 - f. E6: **Tribes**: David Paster is Sec-Gen, Amos → Baltimore & philosophy, Monica joins *Roci's* hunt, Bobbie vs Belters.
 - i. Cyn won't space Naomi, Drummer kowtows to Marco on *Pella* ex-MCRN CL, 'Monsters aren't afraid'.
 - g. E7: **Oyedeng**: Naomi on *Pella*, *Roci* hunting *Zmeya* → self-destructs, *Razorback* seeks belters, Naomi out airlock.

- h. E8: **Hard Vacuum**: Amos→Erich, Naomi on *Chetzemoka* trap → Drummer's fury, Chrisjen disagrees w/ Paster.
- i. E9: **Winnepesaukee**: Free Navy status, Naomi-altered msg→Drummer retasked, Amos→Shuttle, Chrisjen quits
 - i. Chrisjen the "once-&-future-Queen", Drummer learns truth, Marco tells Filip the truth about Naomi.
- j. E10: **Nemesis Games**: Roci wins vs 5 Free Navy w/ Drummer help, Alex→Naomi, Marco pissed, Luna reunion.
 - i. Monica knows Proto-Torp got away, Marco takes *Medina, Barkeith*→Laconia eaten by Ring Entities.
- 11. **Season 6**: Amazon Prime 2021/12/10-2022/01/14, 6 episodes, Ring #373 Planet 2 intro to rise of the Transport Union.
 - a. E1: **Strange Dogs**: Laconia fauna, Earth Ecocollapse, Roci privateer, Marcos bored on Ceres, Drummer's traps
 - b. E2: **Azure Dragon**: Cara's 'bird' dies, Roci resupply+Bobbie, Filip out-of-prison, Liang's 1st, Roci→*Azure Dragon*.
 - i. Only thing more ludicrous than **Azure Dragon NOT having sensors in ALL directions** is that intercept!
 - ii. The capture of the *Azure Dragon* was MUCH more plausible in the book!
 - c. E3: **Force Projection**: Cara's 'bird' reanimated, Xan dies, Ceres retaken, Amos&Bobbie bonding: [Win or Lose](#) 4m
 - i. Prax→Amos SUPERCropData, Naomi discovers Ring Entities, Ceres dock boom, Marco fails vs Roci, ~~nuke~~
 - d. E4: **Redoubt**: Cara takes Xan's body, Peaches discovers Holden disarmed nuke, Drummer raids Marcos depot.
 - e. E5: **Why We Fight**: 'Dogs' fix Xan, MCRN killed by BIG Rail Guns, Drummer supplies→Ceres, Drummer family.
 - f. E6: **Babylon's Ashes**: Cara&Xan run away, last battles w/ tricks, Ring Entities eat Free Navy, happy ending?
 - i. Peaches has 5 yrs to live, [Epic Assault Team](#), Duarte forsakes Marcos, Transport Union, Filip leaves b4 ring
 - ii. This episode **Won the 2022 HUGO for Best Dramatic Presentation, Short Form!**
- 12. **Book 7: [Persepolis Rising](#)**, starting off with the accomplishments (& continuing problems) of the Transport Union, & then the conquest of the combined Transport Union & Earth-Mars Coalition (EMC) to the reemergent Laconians.
 - a. **Magnetar-class battleships**: *Heart of the Tempest*, *Eye of the Typhoon*, *Voice of the Whirlwind* (unfinished).
 - i. *Tempest* has enough firepower & endurance to defeat all Sol's military alone.
 - ii. **U.S.M. Field Projector**: antimatter-primed temp tiny ring gate that spaghettifies targets magnetically.
 - 1. Also described as "ultrahigh magnetic field projector".
 - 2. 4x ~25 cm diam "Magnetic Containment Explosion Danger" antimatter shipping spheres.
- 13. **Book 8: [Tiamat's Wrath](#)**, the old Roci crew lead the Resistance to the Laconian Empire, dominating all humanity.
 - a. **Gathering Storm**, prototype *Pulsar-class* Laconian Destroyer, "couple thousand tons" with these attributes:
 - i. Keel Railgun firing a 3.5 Kg slug (200 rounds) every 5 sec able to "punch a hole thru smaller moons."
 - ii. 2x 4-rail Torpedo Launchers with a fast reload of 70 seconds for all 8 (80 torpedo total loadout).
 - iii. 12x rapid PDCs (Point Defense Cannons), with 4x coverage from any angle.
 - iv. Liquid Hydrogen Heat Sinks capable of masking ship's thermal profile for several hours.
 - v. Radar Signature of a "bunk bed". Not the most useful scale, but the authors' can do what they want!
 - b. **Falcon**, tailored Laconian fastest Science ship in history, capable of sustained 30 G burns with help of fluid suspension crash couches to keep crew alive.
 - c. **Pulsar-class Destroyers**, Laconians lament that they've only got 280 of these to try to control 1371 Gates.
 - d. Anti-aging regimen extends human lifespan to 120-160 years.
 - e. Introduction of **Alexander (Zan)** & **Cara Bisset**, the creepy immortal "repaired" Laconian kids.
- 14. **Book 9: [Leviathan Falls](#)**, 2021
- 15. **The Expanse Board Game**: Medium difficulty, one "**Doors and Corners**" expansion, 2-4 players.
 - a. 2-player OPA vs Mars, 3-player adds Earth, 4-player adds Protogen, all with slightly different capabilities.
 - b. Vying for control of 16 bases, no dice, and no real combat between fleets in orbitals.
 - c. There's also a "**The Expanse Role Playing Game**", but I know very little about its details.
 - d. [Nebulous: Fleet Command - If The EXPANSE Was A Space Game](#) this video shows this is the closest to The Expanse's space combat of any online game I've seen, even though they have unrealistic ship speed Limits!
 - e. [The Expanse Gameplay Reveal | gamescom ONL 2022/08/23](#) Clip from Drummer's POV for RPG coming in '23.
- 16. **Other Reading and Viewing**:
 - a. [Belgian Mary](#) watching 1st episode of **The Expanse** & becoming an instant fan.
 - b. Kim Stanley Robinson's **Mars Trilogy** of books is considered by some to be a **The Expanse's** Mars Prequel.
 - c. Liu Cixin's **Three-Body Problem** trilogy is amazing, from a cultural, story-line, & writing-style perspective!

- i. I DON'T recommend watching the 2023 Chinese [Three-Body](#) since it's faster to read the books!
- ii. I do recommend the 2023 U.S. [3 Body Problem](#), since it captures most of the 1st book's intent.
- d. Adrian Tchaikovsky's **Children of Time & Children of Ruin**, are both truly extraordinary hard-science fiction!
- e. **The Peripheral**, is stunning, fascinating, & well-worth your viewing time, but [2023 SAG-AFTRA strike](#) killed it.
- f. **For All Mankind**: Soviets land man on Moon 1st & altered history after that (OK Space-related Soap Opera).
- g. **Star Trek: Strange New Worlds**: has reclaimed The Original's vibe, does some wacky stuff, but so did TOS!
- h. **Foundation**: If you love Asimov's excellent books, then you'll be really let-down by this weak visual series.
- i. **Lost In Space**, surprisingly entertaining, but it's not in the same league as **The Expanse**.

The Expanse, Drive, a very short story getting "standalone ebook publication within *Memory's Legion* on 2022/03/15."

1. Books grab reader's attention differently than screen adaptations, so this story starts with dramatic acceleration rather than a visual preamble of where and when the scene is.
 - BTW, there is NO reference to the specific year & no "137 years earlier" statement.
2. Solomon Epstein's yacht had his fuel reserve at 90% at start of test.
3. Ten minutes into burn the fuel was at 89.6%.
4. Every 2 minutes the fuel reserve goes down another 0.1%.
5. Solomon's mental calculation is after all fuel used in 37 hours the yacht will be at about 5% C.
6. Solomon met his future wife (Caitlin Esquibel) ten years earlier, at 1 of 4 real pubs there. (5th one non-alcoholic.)
 - Solomon was working at Dhanbad Nova research center then.
7. Epstein Drive invented 3 generations after 1st Martian colonists arrived.
 - Which was 11 years after one of Solomon's friends stated Mars was self-sufficient.
 - Solomon was an "Engine Engineer" for "Masstech" corporation.

From the EXPANSE: information from [Atomic Rockets](#) at [The Expanse Wiki](#) state the Epstein drive possesses the following performance characteristics (based upon the performance of Epstein's yacht):



- Thrust: 1,000,000 N
- Specific Impulse (i_{sp}): 1,100,000 seconds
- Exhaust Velocity (v_e): 11,000,000 m/second (~3.7% of light speed)
- Mass Flow Rate (\dot{m}): 0.09 kg/second
- Thrust Power: 5.5 Terawatt
- Engine's Thrust to Weight Ratio: ~140 ^[Citation needed]
- Propellant mass fraction (yacht's mass fueled / mass empty): ~4

An alternative set of [performance statistics](#) has been suggested by the [Tough SF](#) website, based on the performance of the [Rocinante](#) on-screen:

- Thrust: 6,370,000 N
- Specific Impulse (i_{sp}): 1,927,000 seconds
- Exhaust Velocity (v_e): 18,900,000 m/second (6.8% of light speed)
- Mass Flow Rate: 2.2 kg/second
- Thrust Power: 60.2 Terawatt
- Total power output: 96.8 Terawatt

- Engine's Thrust to Weight Ratio: Presumably over 3 (The *Roci* has a dry TWR of 2.6)
- Fusion type: D-He3 (1:2 mixture ratio)
- Fusion pulse rate: "*can be achieved with as few as 10 pulses per sec, or hundreds if possible*"

Latter estimate would give a fully-fuelled *Nauvoo* with a Dv of 0.24c a mass ratio of around 34.

- [Images](#)