The popular guide to space mining!

The purpose of this document

This is a guide intended for players new to space mining, to show them the essentials. Also included are a number of links to mining ship setups.

Part 1 (page 3+) focuses on knowledge: Understanding the two styles of mining, mining gear and how to setup a mining ship.

Part 2 (page 11+) focuses on preparation, finding where to go for space mining and what minerals are found where. Also the preflight checklist and how to approach a belt safely.

Part 3 (page 18+) focuses on core mining, the most complex mining style yet the one most approachable by small ships.

Part 4 (page 26+) focuses on laser mining, the simplest mining style yet used by bigger, pricier ships.

Part 5 (page 32+) offers miscellaneous tips and tricks.

Part 1: Laser mining vs Core mining

There's a lot of mining gear, but thankfully you don't need to carry everything in one ship. That's because there's two different mining methods so it is recommended to specialize your ship in only one style.
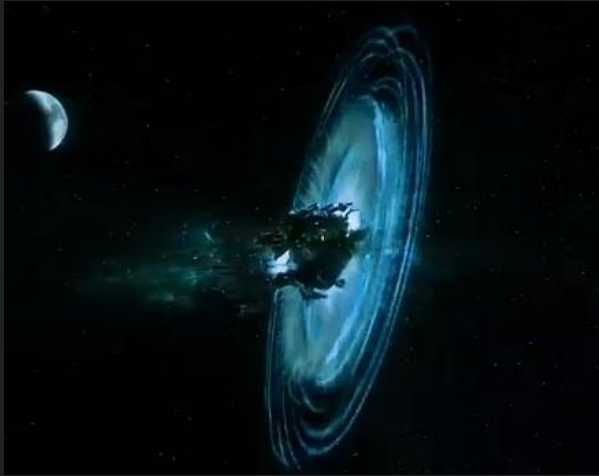
Laser Mining: Simple to do, costly to setup for. These ships use mining lasers to break off 'common' minerals from asteroids, and their numerous collectors fly around to collect fragments to refine.
This is best suited for big ships with lots of internals and cargo.

Core mining: Requiring skill, luck and flight speed. These ships use pulse wave analysers to find asteroids with fissures. Then seismic charges are used to blow them apart, valuable gemstones are then dug up from the asteroid pieces. High value, low tonnage results.
This is best suited for quicker, more agile ships.

Both styles of mining require a refinery, cargo and limpet controllers

Understanding the mining gear-1

Mining requires a lot of internal equipment. They are just complex enough that I'll take a moment to explain the pieces of gear you use on a mining ship, one by one. Here are the optional internals...

__Refinery__: Used to refine chunks of ore into full tons of minerals to fill your cargo hold with. Chunks don't contain full tons, so refineries have 'bins' that slowly fill up to give full tons. The 2A refinery has 6 bins and the 4B has 9 bins, for example. Necessary for both core and laser mining.

__Collector Limpet Controller__: A controller for drones that pick up any chunks in the area. The 1D will get you one drone, 3D will get you two. 5D will get you three. Big miners work best with 5-9 drones out there, multiple collectors. Smaller core miners work fine with only a few.

__Prospector Limpet Controller__: A controller that fires drones straight forward, which analyze any asteroid they hit. Nearly essential since a prospected rock gives you 30-40 chunks of ore, but a non-prospected rock gives maybe 10-12. Essential for core mining and laser mining.

__Detailed Surface Scanners__: The DSS is normally exploration gear, but when you fire a probe at a ring, it can help you find interesting hotspots. These hotspots are good for both core and laser mining.

__In short: mining ship internals involve cargo, one prospector, one refinery, one or several collectors__... __almost certainly a shield generator, ideally a Detailed Surface Scanner.__

Understanding the mining gear-2

MINING LASER

Now, let's review the hardpoints and utilities used for mining.

Mining Lasers: Fixed forward beams that you fire at asteroids, then chunks fly off for pick up. A pair of medium mining lasers (with a good enough power distributor) is ideal for bigger mining ships. This is what a laser miner will use.

Abrasion Blaster: A different kind of mining gun, fire it at surface deposits to break off the goods. Essential for core mining, can be a small bonus for laser mining ships.

Seismic charge launcher: A missile launcher that fires digging charges at fissures. A few well-timed charges can blow an asteroid wide open. Essential for core mining.

Sub-Surface displacement missile: A missile launcher designed to dig into sub-surface deposits, and blows out minerals that dare hide from you. This is optional gear no matter your mining style.

Pulse wave analyser: This utility module is a 'mining scanner'. Used inside an asteroid ring it helps to find asteroids with fissures or sub-surface deposits. Essential gear for core mining and rather power-intensive.

A bit more about the collectors

For a prospector controller you always want 'A' grade since that's more range.
But for collectors, the 'D' grade is quite competitive!

'5A' collector controllers…
-Drones last 12 minutes
-1.56 km range
-Use 0.70 MW power

'5D' collector controllers…
-Drones last 10 minutes
-0.76 km range (plenty good for mining)
-Use 0.40 MW power
-Lighter and less costly to outfit

Because of this, I now design mining ships with grade 'D' collectors.
But of course you're free to improve on my designs – which are intended to be basic.

For mining lasers the sweet spot is two medium mining lasers and a 6A distributor (with 4 pips to weapons).
Only a well-engineered class 7 distributor could handle 3 lasers.

One man, one rock and a tiny ship?

Time to show some mining ship designs. These are the smallest ships if you're just starting and want a taste of space mining. Since core mining is well suited for small ships, I designed these with seismic charges and abrasion blasters. Small trick: You can 'save' a few tons of mined minerals in your refinery bins when your hold is full.

The **Adder** is reasonably priced and the first with a class 2 hardpoint, necessary to launch seismic charges. Unfortunately can't fit shield and DSS.

You can setup a **Cobra Mk 3** or a **Viper Mk 4** for a few million credits. (Start with a B-class FSD to shave a mil off the price) The cobra is quicker while the viper is both tougher and smaller. If you are a 'Horizons' backer from years ago, the **Cobra Mk 4** is an ideal light mining ship.

The **Asp X miner** can haul nearly 100 tons with all the gear of a full-featured core mining ship. You can vary the hardpoints or make other tweaks. (Save 4 mil with a B-grade FSD.)

Most of these designs have no shields. You'll have to avoid interdictions and count on your bulkheads to survive bumps, so fly carefully. And when you explode an asteroid, stay FAR away.

Setting up a medium mining ship

These ships hit a sweet spot where they have can be setup either as core miners or laser miners. Sometimes even both at the same time! Just adjust the hardpoints to taste. If you only want to do laser mining you can remove the DSS and pulse wave scanner.

The **Krait Phantom** is a bit costly for its tonnage, but makes up for it with great jump range, agility and a superb canopy. A very good choice for core mining, a fairly good choice for laser mining. It can't carry all five hardpoints however.

The **Krait MkII** is midway between the python and phantom, Holds a little less cargo than the python, a little more agile. Does very well in both laser and core mining.

I consider the **Python to be the prince of mining**. Small enough to do it all, tough, reliable and big enough to carry all the gear.

The **imperial Clipper** is a quirky choice. It offers style and speed. A little big for core mining and suffers from oddly placed hardpoints, but it is fast enough to be good at it. It does well as a laser miner, and is very affordable at two thirds the price the other ships in this category.

Setting up a big mining ship

Time for the big leagues! Here are a few pricier designs intended for high tonnage laser mining.
These are big enough to easily adjust, arm them up or swap cargo / collectors to tweak the number of drones. Carry an abrasion blaster or sub-surface missile if you feel like it. Seismic charges are not recommended as these ships aren't quick or small enough to navigate well around blown 'roids. And they are slow to move between far-off asteroids.

Type-9 – 130 mCr get you a reliable workhorse with 640 tons of cargo.

Anaconda – 193 mCr get you 9 drones, 10 bins and 320 tons of cargo.

Type-10 defender – 222 mCr get you 384 tons of cargo and is easy to arm up.

Imperial cutter – 300 mCr get you 9 drones, 10 bins and 576 tons of cargo.
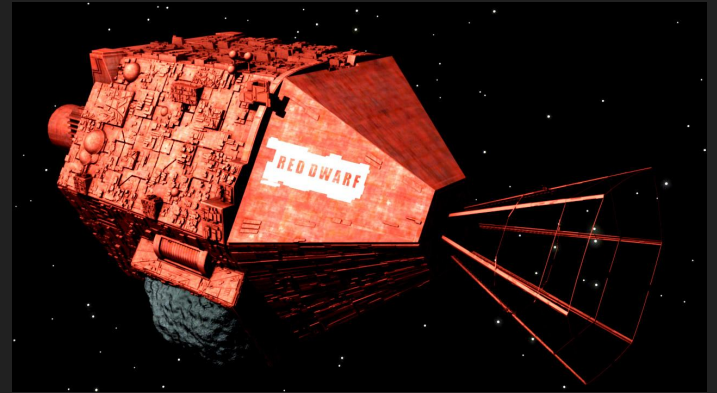
The key to a 'good' mining ship is to have…
1: A strong enough distributor to fire two medium mining lasers a long while. 6C requires two volleys. 6A at 4 pips will need one volley
2: 4-9 collector drones flying around (2-3 controllers)
3: A refinery with 6 bins or more.
4: A DSS, though technically optional is still very desirable.

Setting up a bizarre mining ship

Some folks like to use unusual craft. Here's a few workable examples. Usually not cost-effective.

The [Federal Dropship](#) at 32 mCr has no shields, but is quite tough! For that Industrial, colonial marine feeling.

A [Mining Orca](#) is pricier than a krait but more stylish. Fast enough to do either core or laser mining.

The [Mining Beluga](#) is… workable, but very much a fish out of water if you ask me.

In order to do some long-range mining, I've designed and heavily engineered an interesting ship, the 'mining explorer'.

My ["August Odyssey" Anaconda](#) combines exploration and mining gear along with a superb jump range. The intent: to visit the various outposts outside the bubble and do some mining missions way out there.

Only with engineering can you get something that crazy.

Part 2: Finding belts to mine in.

For core mining, the belt type has less importance as you can find gems a bit anywhere, go for any dense ring.
For laser mining, you'll want to avoid asteroid belts and focus on rings around gas giants or big planets. Ring 'type' can be Rocky, Icy, Metal-rich and the most desirable one for laser mining: Metallic.
Ring 'quality' goes from Depleted, low reserves, common, major up to the most desirable: pristine reserves.

So the very best laser mining spots would be pristine metallic rings, with a nearby industrial or high tech station to sell minerals to. But keep in mind that mining in common reserves is still very good. Try various spots, your mileage will vary.

Bulletin board missions may drag you to different ring types for certain minerals. I've listed mineral contents of belt types in next page.

When looking for mining spots, ask around! Chances are your friends know a good spot or three. And if they don't, https://eddb.io/ is your friend.

To search in EDDB: Go in 'bodies', select 'pristine' and a ring type at the top right. Then put your system at the bottom left – reference system.

than 150 K.
Pristine reserves
EARTH MASSES: 54.6929
RADIUS: 52,279KM
GRAVITY: 0.81G
SURFACE TEMP: 98K
ATMOSPHERE: 71.1% HYDROGEN
                     28.9% HELIUM
ORBITAL PERIOD: 5,461.6 D
SEMI MAJOR AXIS: 6.08AU
ORBITAL ECCENTRICITY: 0.0006
ORBITAL INCLINATION: 4.54 °
ARG OF PERIAPSIS: 271.80 °
ROTATIONAL PERIOD: 1.5 D
AXIAL TILT: 21.59 °
HIP 105408 2 A Ring
RING TYPE: METALLIC
MASS: 15,493,833,728.0 MT
SEMI MAJOR AXIS: 0.00AU
INNER RADIUS: 82,287KM
OUTER RADIUS: 85,251KM
HIP 105408 2 B Ring
RING TYPE: ROCKY
MASS: 318,128,357,376.0 MT
SEMI MAJOR AXIS: 0.00AU

'Pristine' reserves is ideal.

'Metallic' type is best.

This is the inner belt info.

This is the outer belt info.

Hotspots!

Rings may contain 'hotspots' that contain a higher concentration of ores. They're found using the Detailed Surface Scanner. These are recommended spots for both mostly core mining, but painite hotspots are helpful for laser mining.   There are even some overlapping spots! A good resource to find them is http://edtools.ddns.net/miner

Fire a probe from the DSS into a ring...

Hotspots are revealed! Visible while you're in analysis mode, and listed in the contacts of the left-hand panel.

Dammit Jim, I'm a pilot, not a geologist!

Asteroid rings come in four flavors: Metallic, Metal-rich, Rocky and Icy. If you focus on laser mining or mining missions, this list comes in handy for knowing what minerals are found in what kind of belts. (And their value at the time of writing)

Metallic: *painite(rare)– 40500Cr, platinum – 19279Cr, palladium – 13298Cr, gold – 9401Cr, osmium – 7591Cr, praseodymium – 7156Cr, samarium – 6330Cr, silver – 4775Cr, bertrandite – 2374Cr, indite – 2088Cr, gallite – 1819Cr*

Metal-Rich: *gold – 9401Cr, osmium – 7591Cr, praseodymium – 7156Cr, samarium – 6330Cr, silver – 4775Cr, bertrandite – 2374Cr, indite – 2088Cr, gallite – 1819Cr, coltan – 1319Cr, uraninite – 836Cr, lepidolite – 544Cr*

Rocky: *samarium – 6330Cr, indite – 2088Cr, gallite – 1819Cr, coltan – 1319Cr, uraninite – 836Cr, cobalt – 647Cr, lepidolite – 544Cr, rutile – 299Cr, bauxite – 120Cr*

Icy: *Tritium – 20-40k, bromellite – 7062Cr, lithium hydroxide – 5646Cr, methanol monohydrate crystals – 2282 Cr, methane clathrate – 629Cr, liquid oxygen – 263Cr, water – 120Cr, hydrogen peroxide – 917Cr… And very rarely, low-temperature diamonds.*

Also note you'll get a number of engineering materials while mining. Carbon, Iron, Nickel, Sulphur and a few others.

Core mining's precious gems

If you're doing core mining with seismic charges, asteroid with fissures will be cracked open to reveal high value commodities. Sometimes it's platinum, palladium or painite same as can be (rarely) found in metallic rings, but with a little luck you'll find precious gems! Very valuable.

Gems are not always about the money…

These commodities are gems

Alexandrite
Grandidierite
Musgravite
Monazite
Serendibite
Rhodplumsite
Benitoite
Void Opal

Many stations will offer ludicrous credits for some gem types. It is well worth your time to visit trade tools such as eddb.io or inara.cz to find good places to sell gems.

Be mindful of the 'best' places to mine at, as they also attract piracy-minded commanders. edtools.ddns.net/miner is a good resource updated by elite miners.

Checklist before takeoff

Now that you have your mining ship and know where to go, time for a last checklist before you fly off towards your claim.

1 – Double check your controllers. You want one prospector, and multiple collectors. Shooting hatch breaker limpets at a rock will make a miner feel stupid. (and yes, it has happened to me)

2 – Pick up lots of limpets. Buy about 1/2 to 2/3 of your cargo worth of those, splurge, they're easy to be rid of and cheap. (They're in advanced maintenance – restock, by the way)
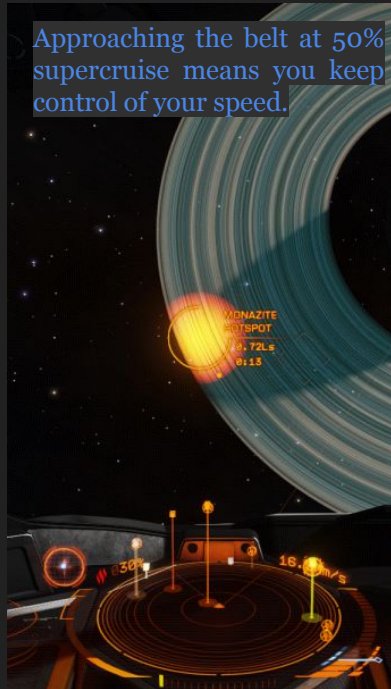
3 – Check your fuel range. In the galmap there's a slider showing how far you can go with full cargo. It's worth making sure you can go to your mining spot, and back to a safe station with room to spare.
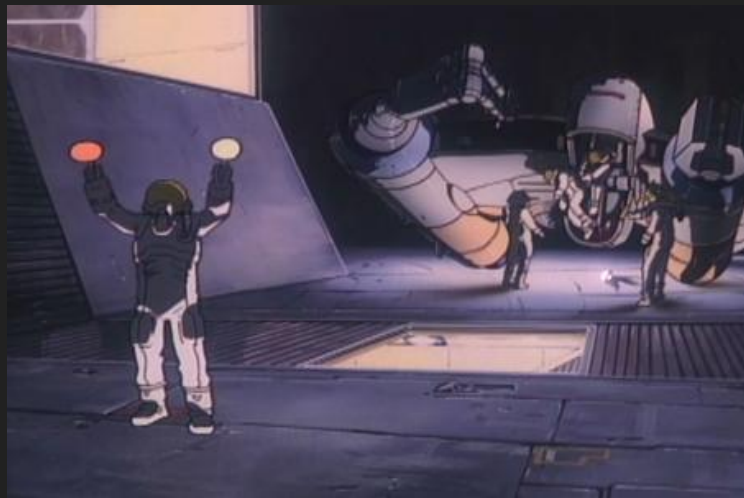
How to (safely) fly into a belt

You can fly into a belt at full speed and suffer some damage, but here's a gentler way.

Approaching the belt at 50% supercruise means you keep control of your speed.

As you gets closer to the belt, lower speed gradually.

When you see the rocks, try to 'hit' them below 100 km/s. Which will safely drop you out of supercruise.

Here I am aiming for a hotspot, notice how the ship doesn't offer you to drop on the site - gotta do it manually.

If you do laser mining with wingmen to cover you, you might enjoy the extraction sites.

Protip: It's a good idea to enter the belt between the sun and gas giant, and gradually head towards the jovian. It helps to keep one's bearings

Avoiding space pirates!

Space pirates are a pain. You'll have to dodge interdictions when you're going back to sell minerals. But even getting into the belt you'll likely see a troublemaker approach you and scan you for juicy cargo. Here's a few tricks...

First thing to know: Pirates don't care for limpets. **So enter a ring carrying nothing but limpets!** On arrival a pirate may appear and scan you. They'll leave you be if you carry nothing else.

If they show up mid mining, consider paying them if they don't ask for too much, don't risk your ship over a matter of pride. (Inventory->Click cargo->Eject)

A good trick to evade them is to enter silent running as they start to scan you, then zoom far away while still silent. A heat sink or two help a lot with this method.

When you're loaded with minerals and on your way out the belt, fly defensively, be prepared to fight interdictions. Try and head to a station that's only a few LS away, or jump to a system with such an easily-reached stations if you can.

Part 3 - Core mining

Okay, you're finally in a belt. Time to get started… If you're setup for core mining, you'll be looking for rare asteroids that have 'fissures'. These can be broken apart to reveal precious gems.
I recommend you focus on pristine rings, and rocky/icy asteroids show the fissures more clearly.
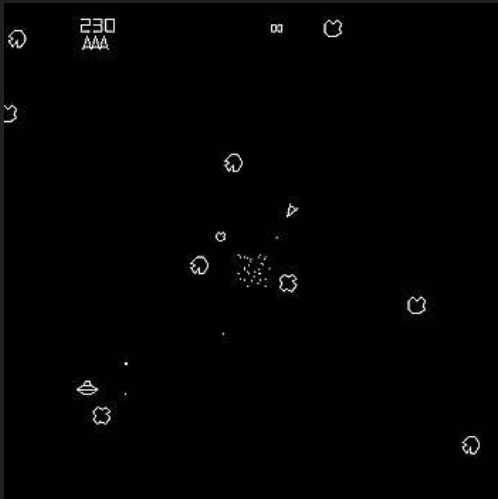
Now we're playing with asteroids

So these are the steps you need to learn…

1-Use the pulse wave scanner to spot potential asteroids
2-Fly to a bright yellow candidate to see if it has fissures, visually or with a prospector limpet. (move on if it has no fissures)
3-Prepare seismic charges to blow open the asteroid
4-Explosions!
5-Fly in and around the debris to find revealed surface deposits, the abrasion blaster will shear those off for collection.

Pulse Wave Scanning

The pulse wave scanner will help you find asteroids with 'features'. To use it, tap the fire button to scan, three seconds later it will resolve asteroids of interest in yellow…

For core mining, you want to find fissures. I recommend you focus your search on the medium or big asteroids, small ones can't have fissures.

The more features a 'roid has, the yellower its color. But the color is opposed by the size of the 'roid…
So Yellow intensity = # of features divided by size?

Searching for fissured asteroids is like sluicing for gold in a river: it will take persistence, practice and luck before you 'strike gold'. Keep at it! Don't give up!
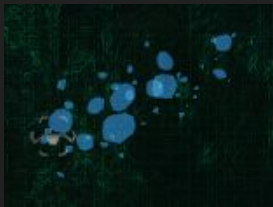
Asteroid features

Asteroid features come in three flavors: Fissures, Surface deposits and sub-surface deposits.

Seismic charges are set on these to break open asteroids. The start of core mining. Easier to spot visually on icy or rocky asteroids.

Mined with abrasion blasters. The second phase of core mining. Can be found independently from fissures.
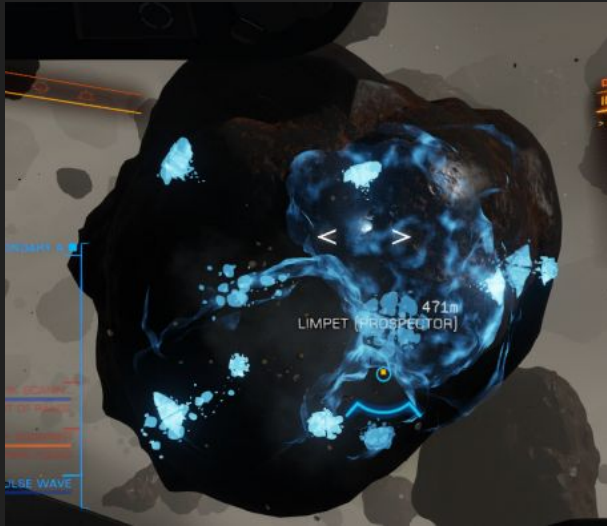

Mined with sub-surface displacement missiles, the most optional mining target/method.

Using a prospector - core mining style

The prospector drones act like direct fire missiles. Point to your asteroid, fire and when the prospector hits target the drone to see what it contains. Features will be revealed in the contacts.

Let your prospector hit the asteroid...

LIMPET...   385m
MINERALS REMAINING 100.00%
LEPIDOLITE 25.94%
INDITE 5.42%
URANINITE 1.23%
MATERIAL CONTENT: MEDIUM
CORE DETECTED: MONAZITE

And if you have fissures and gems, it will look like this!

Fissures and seismic charges - 1

Prepare your seismic charge launcher and target a fissure, you'll need a few charges to blow open an asteroid.

When you target a fissure, the strength is shown. Firing a high strength charge at a low strength fissure will have more impact.

ASTEROID FISSURE
859m
AVERAGE STRENGTH

SEISMIC CHARGE
1/72

Hold fire to raise the seismic charge to the level you want...

...Let go, the missile flies forward...

...And assuming the missile hits near the fissure...

INFO
22:28:34
DETONATION TIME
DETONATION YIELD
117.421

The detonation yield will go up, you want to hit the blue area, it takes a few charges.

Fissures and seismic charges - 2

Once you reach the right detonation yield (or go a little too high), go to your contacts and there's an option to detonate… And don't forget to get to a safe distance.
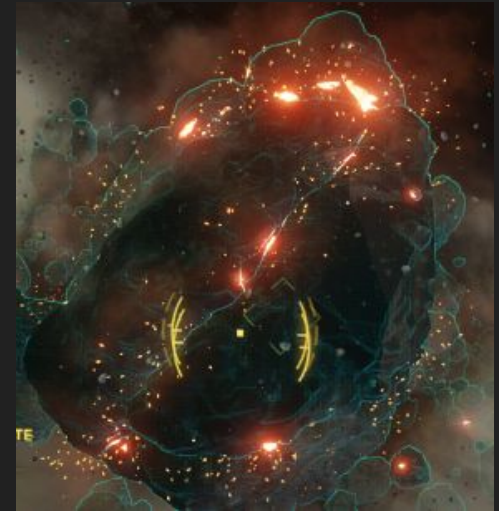

This is an example of ideally placed charges

Left hand panel will show an option to trigger the charges, punch it!

(withdraw to a safe distance)

I have one question for you: Explosions?!?

Using the collectors properly

To pick up the flying fragments, it's most effective to use collectors than to manually scoop. But there's an important thing to know: **Don't target a fragment when you fire a collector!** Target a prospector, target nothing, or you will lose collectors fast due to an intended behavior.

Collector drones have two possible behaviors:
–'Pick up a targeted item then stop functioning'
–'Pick up everything in range'

If you target anything that can be picked up. Collectors default to the first behavior. This means the drone will dash to pick up that one item, deliver it to you and then explode with joy.

As a miner you want the second behavior, so target a prospector or a planet or nothing. Then your collectors will act like worker bees and pick up everything in range.

And remember to open your cargo bay, obviously.

TAU EMPIRE: DRONE ARMY

BROADSIDE DRONE
XV-88 BROADSIDE BATTLESUIT

CRISIS DRONE
XV-8 CRISIS BATTLESUIT

SNIPER DRONE   SNIPER DRONE CONTROLLER   STEALTH DRONE
XV-25 STEALTH BATTLESUIT   FIRE DRONE
FIRE WARRIOR

Polish that rock – the abrasion blaster

Once the rock is blown open, there's a few fragments floating around that collectors will pick up, but most of the minerals you want are in surface deposits revealed by the explosion

Fly between the debris to find the surface deposits. (the left-hand contacts panel helps a lot)

Fire the abrasion blaster at the surface deposit, and precious fragments fly off. Your collectors will go after them.

Collect, refine, return, profit!

Part 4 - Laser mining

A simpler way to space mine, but most suited to bigger ships is to use mining lasers. It involves finding out if an asteroid is worth stripping, and firing the lasers at it till depleted.

So these are the steps you need to learn…

1-Poke at an asteroid or fire a prospector to find out if it's worthwhile to laser mine it.
*2-Target the prospector (to see how you're doing) and fire at the 'roid until it depletes*
3-While firing, maneuver close to help your collectors to efficiently bring fragments to your hold.
4-Your refinery will refine fragments into commodities, but you may need to keep an eye on it.

Using a prospector – laser mining style

The prospector drones act like forward-firing missiles. Point to any asteroid, fire and when the prospector hits, target the drone to see what it contains.
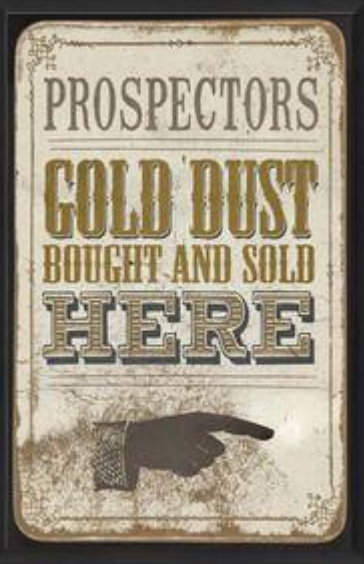
The classic 'most valuable metals' are Painite, Platinum and Palladium. Honorable mentions go to Gold, Osmium and Praseodymium. Osmium is sometimes requested by bulletin board missions as well.

(Here's a memory trick: PaPa's Plated Gold Oscar was Praised.)

One thing to know: If you have a rock with 20% or more of the minerals you want, that's a good rock to mine.
30% or more is excellent. 15% is so-so.

Ice belts have much lower percentages, so 10-15% is considered good in those.

LIMPET [PROSPECTOR]
MINERALS REMAINING 100.00%
OSMIUM 46.04%
387m
Jackpot!

'Poking' an asteroid

You don't absolutely have to use a prospector limpet to gauge if an asteroid is worth laser mining. This is an alternate technique, useful if you're short on limpets.

Fire at an asteroid, just enough to get one fragment out...

Target the fragment, it will give you a sample of what the asteroid likely contains... In this example It has a fair amount of osmium, so this rock's a good one!

(This technique has a small risk of the first fragment being misleading, but generally it gets the job done)

I'm firing my (mining) lasers!

You found a good rock? Time to get to work...

-Target the prospector
-Up your weapon power to 3-4 pips
-Open your cargo hatch
-Fire any missing collectors
-Fire your mining lasers till the asteroid is depleted!

Fragments of ore will fly off, and your trusty drones will fly around, picking up the ore!

An important skill to practice is to get close to the 'roid, with your belly towards where the fragments fly. The drones will need less flight time to bring minerals to your hatch.

Example of a good orientation: scanner shows all fragments are under the ship.

An eye on the refinery

Sometimes you need to clean up your refinery if all the bins fill up. You can free bins by venting undesirable minerals. (Do look at the value of minerals in 'ship cargo' to help you decide)

In this example, I have 8 bins and drones brought in a ninth material.


Option one: You -could- use this vent repeatedly as the drones come in and you get rid of a pesky mineral... But it's best to 'ignore' those minerals nowadays.

Option two: Using one of these vents clears up a bin entirely, It's the smart move here to get rid of indite (a low value mineral) assuming the drones aren't picking up even more indite.

Bonus lesson: sub-surface deposits

Sub-surface deposits are mined by displacement missiles. These act like direct-fire missiles but you need to hold the fire button down and let go at the right time...
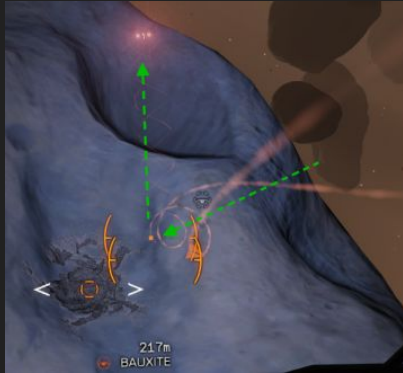
In this example, I missed the deposit and my missile bounced off. Spinning asteroids increase difficulty.

Assuming a hit, remember to **hold down the fire button!**

You'll get a scrolling diagram, let go of the fire button when the cursor hits the blue area...

And a flaming fragment is shot out for you to pick up.

Part 5 (misc) - Ignoring minerals

The refinery could fill up easily since there's a dozen minerals in each belt. Luckily there is a way to program limpets and refineries to ignore minerals you don't want. (Indite and Gallite come to mind).

When a fragment is in space, just look at your contacts then select one with unneeded minerals… And ignore what you don't like. That will help you work with smaller refineries – and keep your cargo hold happy.

In this example, I've ignored Lepidolite. So my limpets would not touch pure lepidolite fragments.
Half-and-half fragments would be picked up, but the refinery would automatically purge the lepidolite out.

Remember the best value metallics:
Platinum, Painite and Palladium, then Gold, Osmium and Praseodynium

Mining in a wing

Mining in a wing works extremely well. Here's a few reasons why…

– Selling minerals together, the miners can share trade dividends.
– They can watch each other's back against pesky pirates. *(Just remember to enter the belt together and empty if you can)*
– They can spread the prospector work and quickly find better asteroids.
– If someone's running out of drones, they can share a few.
– In a joint mining op, you could have one large refinery/drone ship and
  multiple smaller miners.
  (Though there's the hassle of sharing the refined tonnage after the operation.)

But the very best reason is this:
– If a rock drops 30 fragments, it will drop 30 for each player that mines it!

This means that a wing will get great results by scouting a few rocks, picking the best
and having the entire wing mine the same 'roid together, staying tight.
It's super effective!

Advanced tips for mining in a wing

Thanks to Cmdr ChicagoChad we have this step by step to improve wing mining, including some nifty tricks...

1.   *If you use any resource zone, don't drop at it, have a fast ship manually crash 30-50km away or so then move to about 20km away from the center.*
2.   *Wingmates can nav-lock to the 'scout' ship, team thus forms up in the rocks.*
3.   *Mine, keeping 15-20km from the res center. Over 15 the NPCs do not show up often, and under 20 the mining benefits.*
4.   *Go clockwise or counterclockwise from the res center, try to keep a ship prospecting to quickly find good rocks.*
5.   *Always mine rocks with all wingmen on the same side, or limpets will get confused.*
6.   *It's possible to take screenshots and notes of the better rocks and return to them in the future (they take 2 hours to replenish). Quite a trick to achieve.*
7.   *Once a mining ship is full, he can drop a few tons to help other wingmen fill up.*
8.   *When it's time to sell, eddb can help to find good buyers: commodities, choice metal, current system, sell, find stations, sort by time...*
9.   *When travelling as a wing, use whoever has worst jump range as 'leader'.*
10. *Don't use nav-lock to exit, just select wing lead, then his target. FSD charge all at same time to jump.*
11. *Fly in the blue, instruct wing to stay within 100ls so you drop as a group in the inevitable interdiction.*

Random tips

Here are a few random tips…

The scanner has rarely-used zoom keys. Give it a nudge more range, it'll help find which 'roids are near.

Big spinning rocks with weird shapes can whack your poor drones dead. It's strongly advised to fire mining lasers at the 'pole' or axis of those weird spinners to diminish the risk and frustration.

Occasionally, a chunk of ore ends up too close to a 'roid and the drones just lemming themselves to death against it. You'll notice as they keep dying. You'll have to either scoop the offender manually or move a few kilometers away…

If you want to get rid of limpets because you have too many and need cargo space, you can abandon cargo and your collectors will leave them be…

To avoid backtracking and hitting asteroids you already mined, just keep heading towards the planet, or towards Barnard's loop, or towards the sun… Something easy to spot in space.

Mining in the shadow of the planet is pretty risky, unless you use night vision.

For the smaller ships, the refinery doubles as an improvised cargo hold, as you can carry 100% mineral in each bin. They'll unload to cargo the moment you empty actual cargo holds. That can count for extra cargo capacity on the smaller miners.

Thank you for reading

As a parting shot, here's a few links you might like:

https://eddb.io/body is the best resource for finding pristine rings and other fun stuff.
The Market Connector is a favorite tool to give data for EDDB and EDSM, I recommend every Cmdr use it (or something similar)
A less known tool is the pristine metallic distance calculator at http://edtools.ddns.net/ (But sometimes you'll want ice!)
Some funny Elite music: Elite Parodies.
For music I also recommend a search of 'Space age pop' on http://www.shoutcast.com
Of course one must mention Radio Sidewinder
Elite Dangerous Community Developers: https://edcd.github.io/

Elite forums, the various popular guides:
The popular guide to powerplay,
The popular guide to exploration, The popular guide to planetary landings,
The popular guide to mining,
The hitchhiker's guide to the frontier, The popular guide to guardian xenoarchaology

This guide was brought to you by: *Lance 'Spacecat' D.*