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A Beginner's Guide To Probing/Scanning in EVE Online

"These probes were a nightmare - they kept flying in the wrong directions, too high or too low. Sitting in her Magnate this pilot was not having a good day. Still, she nearly had that worm hole narrowed down. One more attempt. Suddenly all shields were gone in a flash of red, a pirate! She should have been paying attention, not just reading the map while sitting in low-sec. Turning for warp took too long and seconds later everything ended. Gulp! Time to find out if being cloned is as good as advertised. Her last thought before fading away being that mother would certainly make comments next All-Saints, with her showing up in a clone instead of her first flesh."

Hidden pirate outposts, wormholes, complexes and of course battleship captains in their Navy Issue Ravens are just some of the things that you can find in any ordinary EVE system. If you know where to look.

Intrigued by stories of people venturing into wormholes and discovering untold riches my hauling alt decided that watching tons of Veldspar was not exactly what she had signed up for. So on her day off she browsed the markets for a cheap Astrometric ship and found it in a second hand Amarrian Magnate.

Training up for a covert ops frigate would take forever and she wanted to have fun right now.

With the introduction of EVE Online Apocrypha the whole scan probing system was overhauled. This means that any pre-Apocrypha articles you find on the Internet will just confuse you hopelessly. The probe launchers, probes and systems used then don't apply/exist anymore.

Skills to train up

To scan for a spaceship you need: several overlapping probes in space and being able to pin down your target as fast as possible. If it takes you 10 minutes to locate that Raven it has moved on already.

1. Astrometrics This is the most important skill. Level 1 allows you to launch 3 probes, each level adds 1 more. Typically you would need at least 4-5 probes to find things in space efficiently. So Level II is really the lowest entry point into scan/probing.
2. Astrometric RangeFinding Each level adds 10% to your scan probe strength. Ideally at Level V of course, if you have nearly two months of training time. This is an (8) skill. I trained it to Level III for now.
3. Astrometric Acquisition 10% reduction in scan time per level. (Requires Astrometrics III)
4. Astrometric Pinpointing Reduces maximum scan deviation by 10% to level. It allows you to more accurately pin down your targets.

Racial Astrometric Frigates

The following ships give a bonus of 5% to scan strength per racial frigate level. The more scan strength you can gather the easier your job of locating things in space becomes.

1. Amarr - Magnate
2. Caldari - Heron
3. Gallente - Imicus
4. Minmatar - Probe

While the above frigates work well to discover scanning, you might want to step up your game in the future. That's where the specialized covert ops frigates come in: they give a whopping 10% bonus to scan strength per level with the added benefit of being able to fit both a probe launcher and cloaking device for stealth scanning.

1. Amarr - Anathema
2. Caldari - Buzzard
3. Gallente - Helios
4. Minmatar - Cheetah

Since the introduction of different sized rigs, fitting rigs on a frigate has become affordable, so you might want to add one or two *Small Gravity Capacitor Upgrade I* rigs to your frigate. Each will add 10% to your scan probe strength. Currently these rigs go for about 150.000 ISK each.

Probe Launchers

To launch scanning probes you need a probe launcher. There are two probe launchers in EVE Online.

1. Core Probe Launcher The core probe launcher is an easy fit on any ship. It takes up one high slot, and just 15tf of CPU and 1MW of power. But it is limited to launching system scanning probes. So you can find everything besides spaceships.
1. Expanded Probe Launcher This launcher can launch both *Scanner Probes* and *Combat Probes*. Similar to the Core Probe launcher it takes up one high slot, but its CPU requirements are much higher. At 220tf it will take up most CPU available on a Tech I frigate, making fitting it much harder.

Two variations exist: *Sisters Core Probe Launcher* and the *Sisters Expanded Probe Launcher*. Both will give a 5% bonus to scan strength.

The probes

Probes are re-usable. Once you have launched them they will survive for about an hour on their own in space. But if you recall them before that time expires you can reuse them endlessly.

1. Core Scanner Probe I This probe can scan down everything besides ships, drones and structures. It is useful for finding exploration sites, worm holes etc.
2. Combat Scanner Probe I Described as an all-in-one for hunt & kill this probe will scan down all that the Core Scanner Probe does, but it will also include ships, drones and structures. So if you want to scan down that Raven, this is the probe to go for.

Again two variations are available: the *Sisters Core Scanner Probe I* and *Sisters Combat Scanner Probe I*. They are exactly the same as the above, except that they also give a small bonus to scan strength.

Still here? Lets get started with probing

Time to find a nice and quiet spot in a friendly system. Expect some frustration until you get the hang of things. I found a nice YouTube video (see below) that show how things are done in practice, but first a little bit of theory that explains the how and why.

Scanning works through a system of triangulation. A single probe will be able to tell you something is there, but it can only give an estimate how far it is, not where. You need 4 overlapping probes to obtain a 100% lock on a target. Generally you will have to narrow down the probes to 2 AU, 1 AU or even 0.5 AU before being able to lock on. This depends on your skills, your equipment and the size of the ship / object you are trying to find. A battleship is huge, so it is easier to find.

Note: you can get a 100% hit on a target with just three probes, but to get a hit you can warp to, 4 probes are required.

Launch the probes using the probe launcher, then select the "System Scanner" from the in-space selection panel or press [CTRL-F11]. Click on the "Show Map" button.

Below are three common search patterns in which you can layout your probes. The more probes overlap the stronger your scan will be. The five probe star (Fig. 3) is a relatively rare case, the most commonly used is probably the four probe star (Fig. 1).



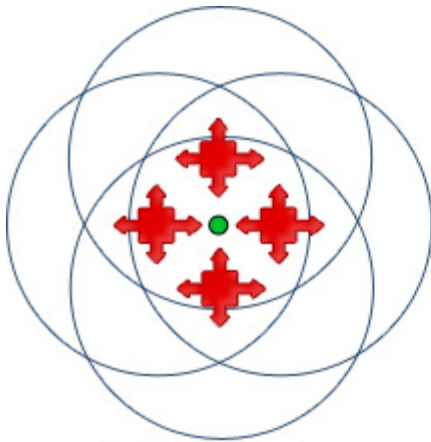


Fig. 1, Four probe star

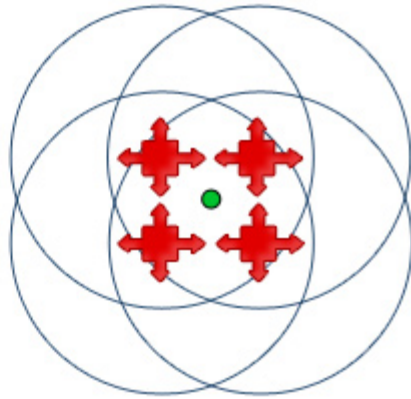


Fig. 2, Four probe square

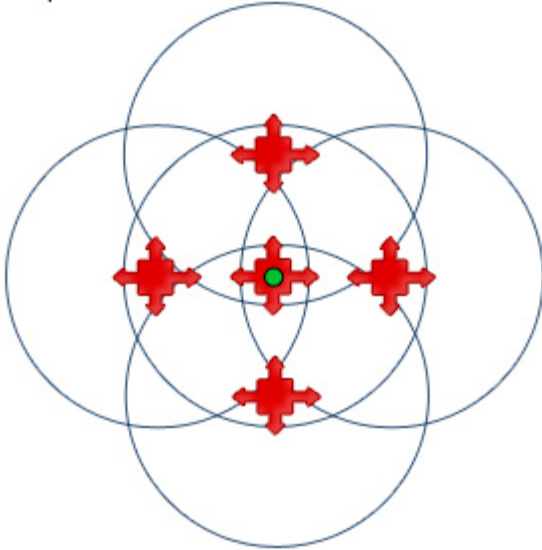


Fig. 3, Five probe star

Note: There is no difference between the four probe star or square: they will find signatures the same way, with the same effectiveness. It is just a matter of how you wrap your mind around the subject.

Typically you will first set the probes at 16 or even 32 AU to cover as much of the current solar system as possible. Hit the "Analyze" button and wait for the results to come in. As you click the items found you have to decide to either move the probes around and cover another part of the system or to narrow down onto one of the signals discovered.

Life saving tip: hold down the SHIFT key to move all probes in space at the same time.

If you have decided on a signal move the probe formation so that its center covers your intended target. In the center all your probes overlap and this where they will give you the most accurate results.

1. To rotate the map **left click** and hold then move the mouse
2. To move the map **right click** and hold then move the mouse
3. To zoom in out use **the middle mouse roller**

Zooming in...

There are five signal strength stages to narrowing down a target. As you click on the list of signals discovered the overview will show:

1. A **red globe**: one probe has picked up on the signal, the size of the globe shows roughly how far from the probe the signal is.
2. A **red circle**: two probes have picked up the signal. The circle indicates the overlapping part of both probes.
3. A **red dot**: three probes have picked up on the signal, and you know the exact location but the signal is still too weak to lock the warp drive on to.
4. A **yellow dot**: you are getting closer. This dot will also not move around too much anymore, unlike red dots.

5. A **green dot**: 100% signal strength, the warp drive will lock on and you can jump to the target.

Keep moving the probes so that the signal is covered by the center of the layout.

Hold the SHIFT key and hold the mouse over the outer edge of one of the probes until it lights up. Then click and move the mouse to shrink (or expand) the scan radius.

After you have shrunk the radius you need to move all probes closer together so that they overlap again in the search pattern. Then hold SHIFT and move them so that the center covers the signal.

Use the arrows on side of the probes for moving them. By using the arrows the probe will only move in a single X or Y direction, and stay in the same Z. If instead you click on the square center of the probe indicator it will move the probe in all 3 axes, likely ending it up somewhere completely unwanted.

Hit analyze, and repeat the above steps until you have a lock. If you started at 16 AU, then go down to 8 AU, 4 AU, 2 AU, 1 AU and 0.5 AU. Depending on your equipment and skills you can start locking down targets from about 2 AU.

It is a 3D world...

Easy to forget, but every now and then rotate the map to see if your probes have not by accident moved too far above or below the solar system. Most solar system objects are on the same Z axis and typically you just need to worry about the X & Y axes.

Saving time

You will encounter systems with a lot of signatures to scan down, in that case you might want to use more than the four/five probes you use to scan down the individual signatures. Why? because once you have scanned down that single signature, you need to move your probes out again to run a system-wide scan to get back the full list of signatures in the system and move on to the next signature.

The easiest way is to launch a few additional probes (depending on the amount of probes you need to cover the whole system) and to activate/deactivate these when needed to rescan the system. That way you don't have to shuffle your probes around that much.

Note: you might think it would be enough after pinpointing that signature to set your four probes to 32 AU and scan that way. That would not work very well though; chances are you had to move them to about 1 to 0.5 AU apart to get a 100% hit on a signature, and packed so tightly together there would not be enough triangulation at 32 AU range for them to get good hits. You would get a lot of red globes and circles.

What you can find

Besides ships, drones and structures that you can scan down with combat scanner probes, there are several types of cosmic signatures that you can discover in a system. Usually you need to get above 25% for the type to be shown, about 60% for the rarer signatures.

Note: Cosmic signatures appear within 10 AU of planets.

- Gravimetric: Hidden asteroid belts
- Ladar: Gas Cloud sites for gas mining
- Magnetometric: Archaeology/Salvage profession sites, need an Analyzer and/or Salvager module
- Radar: Hacking profession sites, need a Codebreaker module
- Unknown: Everything else, i. e.: Wormholes, Exploration complexes and DED complexes

For the professional prober

Probing is a real profession in EVE, and many operations need pilots that are good at scanning. If you want to commit to this or just want to have a perfect scanning clone, you might want to have a look at the specialized implants:

- Slot 1
 - Low-grade Virtue Alpha +1% scan strength
- Slot 2
 - Low-grade Virtue Beta +2% scan strength
- Slot 3
 - Low-grade Virtue Gamma +3% scan strength

- Slot 4
 - Low-grade Virtue Delta +4% scan strength
- Slot 5
 - Low-grade Virtue Epsilon +5% scan strength
- Slot 6
 - Low-grade Virtue Omega +25% to all Virtue implant secondary effects
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPF-0 -2% scan deviation
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPF-1 -6% scan deviation
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPF-2 -10% scan deviation
- Slot 7
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPG-0 -2% scan duration
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPG-1 -6% scan duration
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPG-2 -10% scan duration
- Slot 8
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPH-0 -2% scan strength
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPH-1 -6% scan strength
 - Hardwiring - Poteque Pharmaceuticals 'Prospector' PPH-2 -10% scan strength

The Explorer's Checklist

In no particular order.

- If you start by moving your probes onto the same plane than the signature you are scanning down, you can move them closer without botching up their positions through a wrong perspective.
- Don't multitask your fittings too much. Use a dedicated scanning ship, and a combat ship to run the complexes you find.
- Don't try to explore profession complexes (hacking, archaeology) in your probing ship, rat spawns have many hidden triggers! This is especially true in wormholes.
- Don't forget to fit a core probe launcher to your wormhole exploration ship.
- Complexes are initialized when you warp to them. If you want them to persist over downtime, scan them down and bookmark them but don't warp to them!
- Wormholes do have size limitations. Battleships don't fit all, make sure you don't go 10 jumps for nothing.
- Take more than 4 probes. They are reusable, but they do have an expiration time that's easy to overlook.
- Again, take a healthy amount of probes. There are many ways to lose them, like a server dsync or system crash.
- Lack of skills can in part be compensated by using a scanning frigate, sister probes and launcher as well as implants.
- Make sure you have Deadspace Overseer Structures enabled in your overview when running complexes
- Useless cosmic signatures for combat-oriented pilots: Ladar and Gravimetric sites.

Enough theory

The following video I found on YouTube gives a great introduction to the scanning system, and hopefully combined with the above introduction will get you on your merry scanning way !

<http://www.youtube.com/v/miOnzIgrcuo>

Further Reading

- http://wiki.eveonline.com/wiki/Apocrypha_Probing
- http://wiki.eveonline.com/wiki/Cosmic_Signatures
- http://wiki.eveonline.com/wiki/Exploration_guide
- <http://wiki.eveonline.com/wiki/Exploration>

Credits: Guide originally created by tramov from edenexplorer.info, used with permission.

[EDIT 22/07/10] v1.5 Added the missing implants in slot 6 - [EDIT 25/06/10] v1.4 Restored the guide from backups - [EDIT 09/12/09] v1.3 Extended the explorer's checklist - [EDIT 18/11/09] v1.2 Added links to the relevant subsections, added some additional info, updated the probe layout diagram, added the explorer's checklist - [EDIT 03/11/09] v1.1 Updated rigs information and notes on getting 100% hits with three probes, added list of signature types, added some more links.

Online version: <http://eve.aeonoftime.com/index.php/2010/06/25/reference-edenexplorers-scanning-guide/>