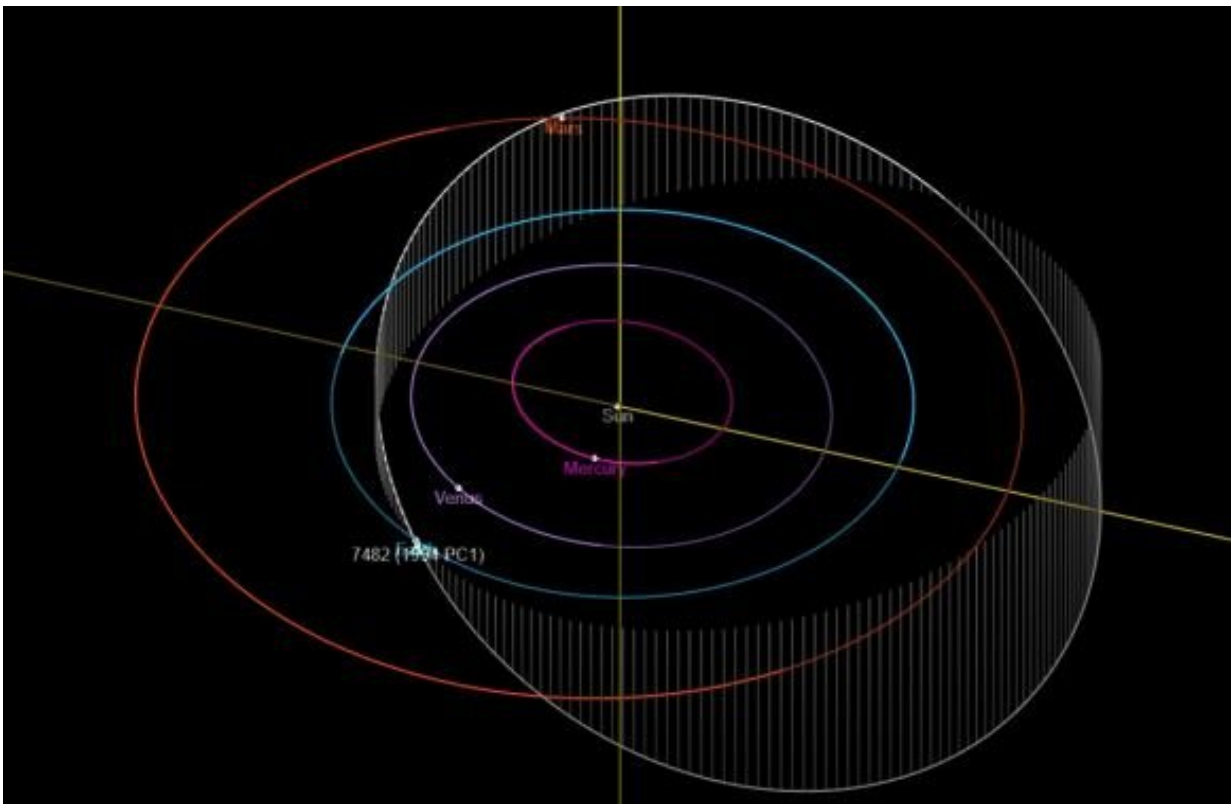


Look up and watch asteroid 1994 PC1 fly past Earth this week

January 18 2022, by David Dickinson



The orbit of asteroid 1994 PC1. Credit: NASA/JPL

In a slow moving universe, asteroids give us a rare chance to see things moving in real time. We have such a chance coming right up on the evening of Tuesday, January 18, when 1.1-kilometer asteroid (7482) 1994 PC1 passes 1.23 million miles (1.98 million kilometers) from the

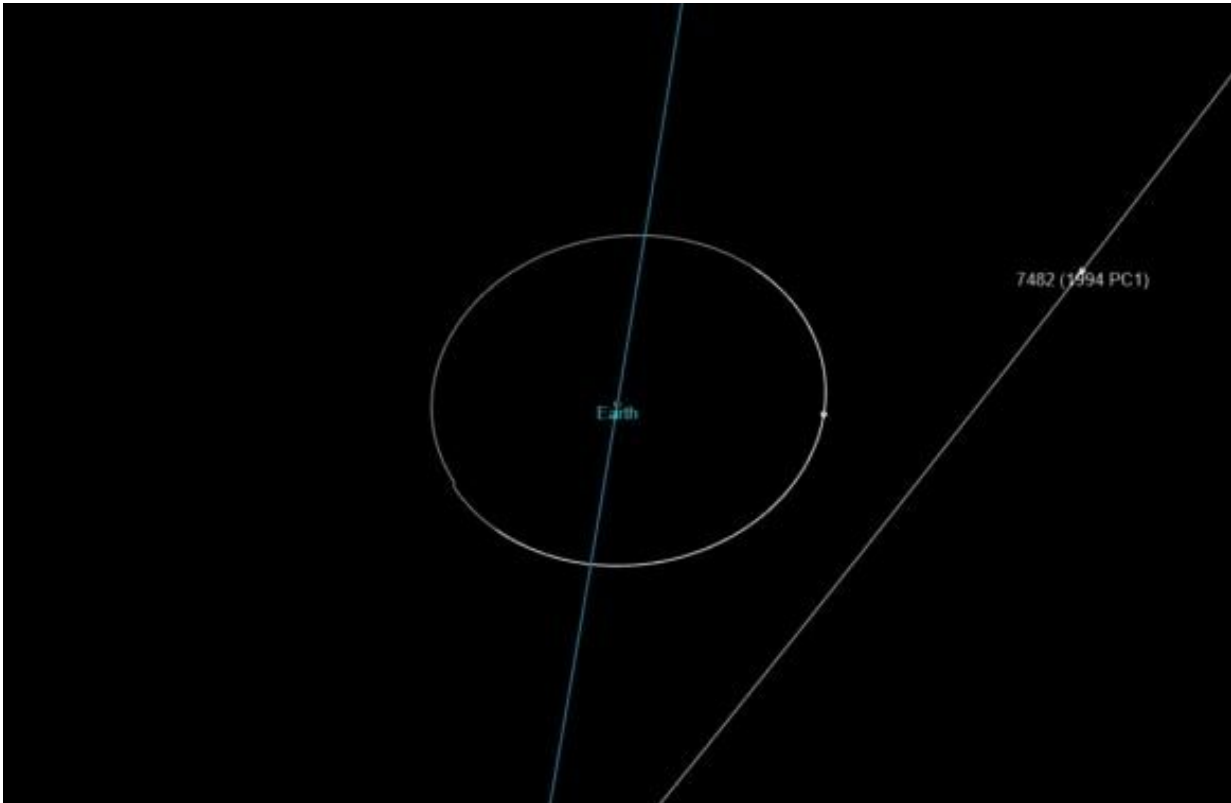
Earth. This is about five times the distance from the Earth to the moon, and just a shade over the distance to the anti-sunward Earth-sun Lagrange 2 point, soon to be the home of the James Webb Space Telescope.

Fortunately, both the Earth and said space telescope are safe from the [asteroid](#) on this pass, and will remain so for centuries in to the foreseeable future. The asteroid was discovered on the night of August 9, 1994 by astronomer Robert McNaught observing from the Siding Spring Observatory. The Apollo asteroid is an Earth-crosser, with a perihelion interior to our own at 0.9 AU from the sun, and an aphelion out in the [asteroid belt](#) at 1.8 AU, with an orbital period of 572 days. It's orbital inclination of 33.5 degrees relative to the ecliptic makes it pass far from the Earth on most years.

Fun fact: looking back through sky plates, 1994 PC1 actually turns up in images all the way back to 1974.

1994 PC1 is a S-class stony-type asteroid, and is only slightly larger than another well-known NEO asteroid 101955 Bennu the target of NASA's Osiris-Rex sample return mission, which returns to Earth with its precious cargo late next year.

This week's pass is the closest for the asteroid since January 17, 1933 (pre-discovery) at 0.00752 AU, and the closest for the next two centuries, although the pass on January 18, 2105 is nearly as close, at 0.01556 AU.

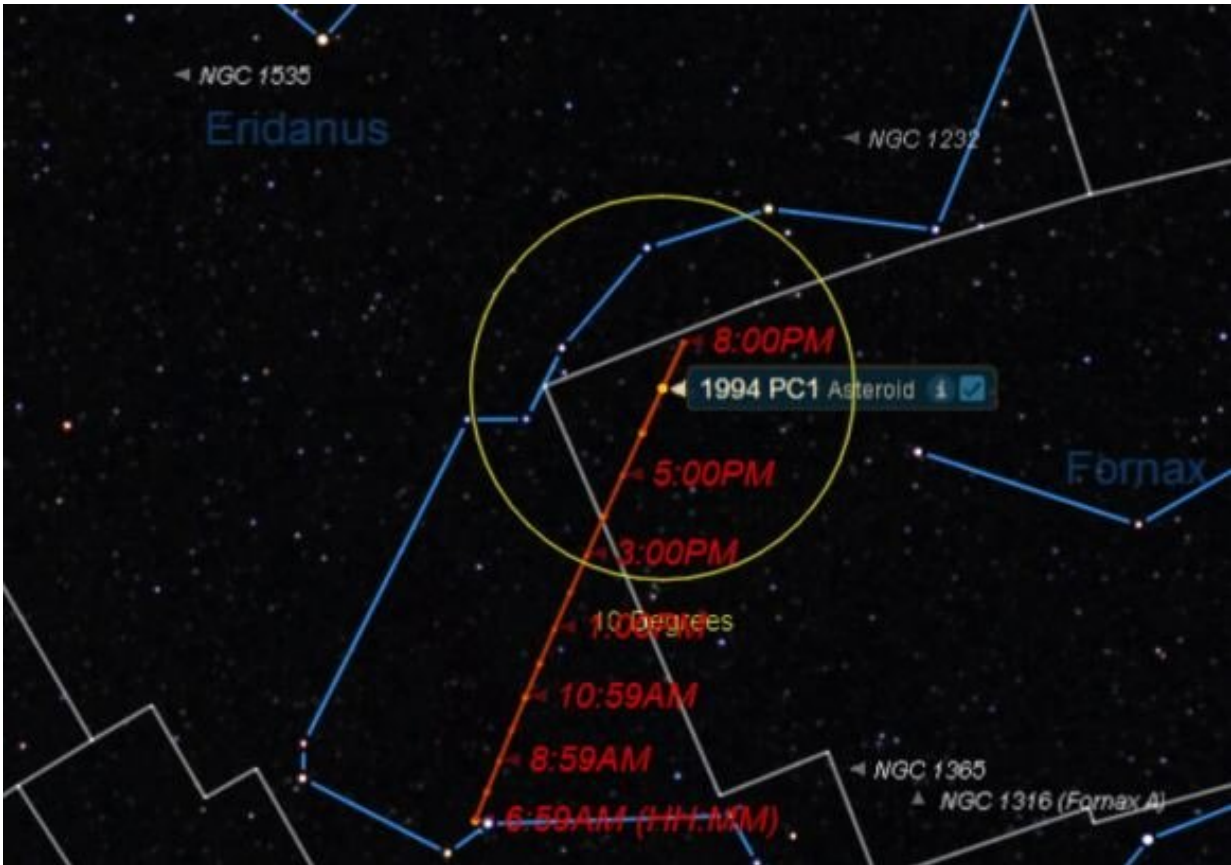


A closeup of Tuesday's flyby. Credit: NASA/JPL

Hunting the asteroid

This week's close approach gives observers a chance to see the asteroid for themselves. At its closest on the night of January 18th at 21:51 Universal Time (UT), 1994 PC1 will be straddling on the Cetus/Pisces border and moving at a blistering 2 degrees an hour (spanning a section of sky four times the size of tonight's Full moon, per hour) or 2 arc minutes per minute. That's fast enough to see the motion of the speedy asteroid versus the starry background after watching it at the eyepiece for just a minute or two. At it's brightest, 1994 PC1 should flirt with magnitude +9 or so, making it easily visible with a small telescope or perhaps, binoculars.

I remember the thrill of seeing asteroid 4179 Toutatis on its close pass in 2004. That passage was very similar to this week's, watching as the space rock silently crept across the starry background.



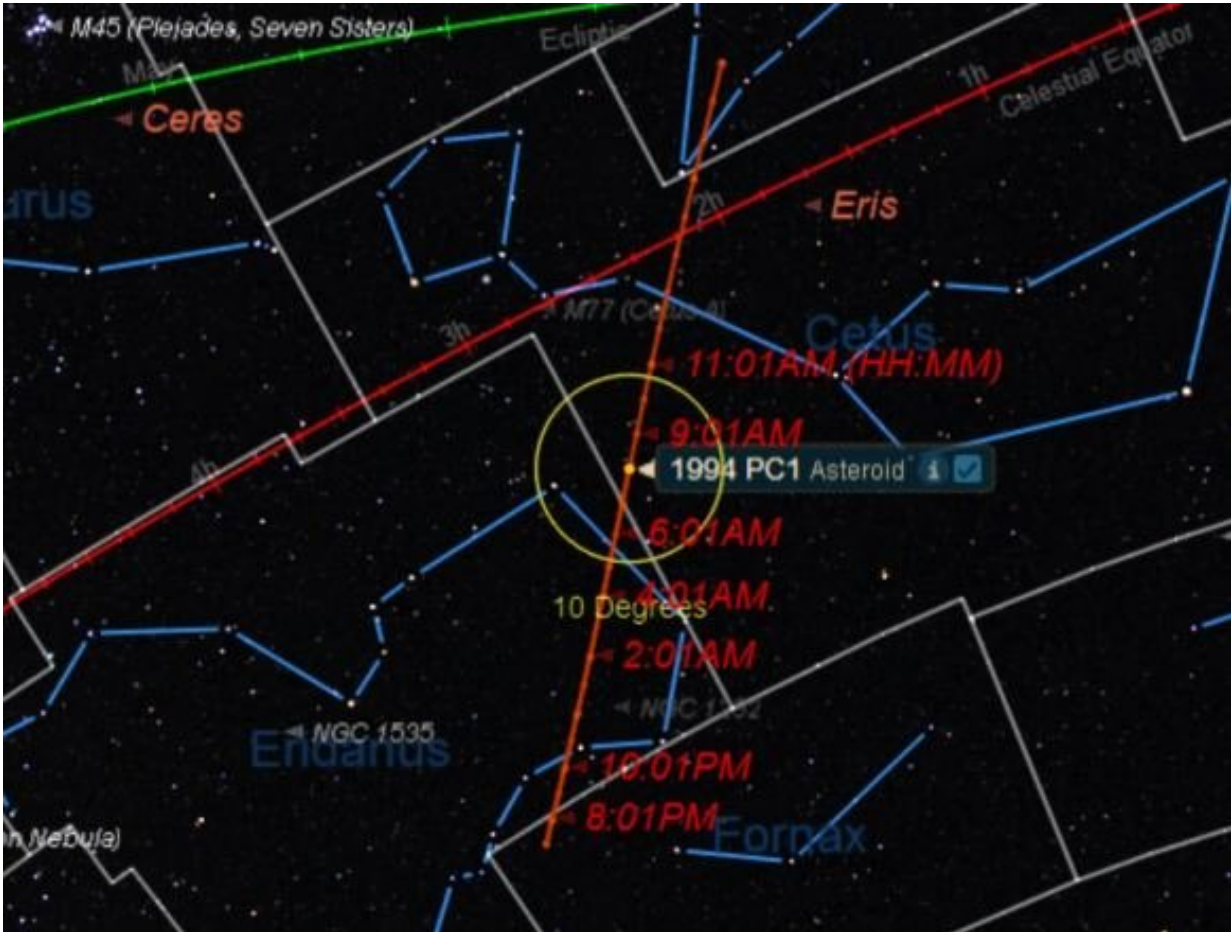
The path of the asteroid for the last 12 hours of January 17th. Credit: Starry Night

The good news is, you can start hunting for 1994 PC1 tonight; the asteroid is still a respectable +12th magnitude plus on either evening before or after closest approach, January 17 or January 19. Also, unlike closer passes, parallax-versus-observer location won't play too much of a factor in the asteroid's true position in the sky.

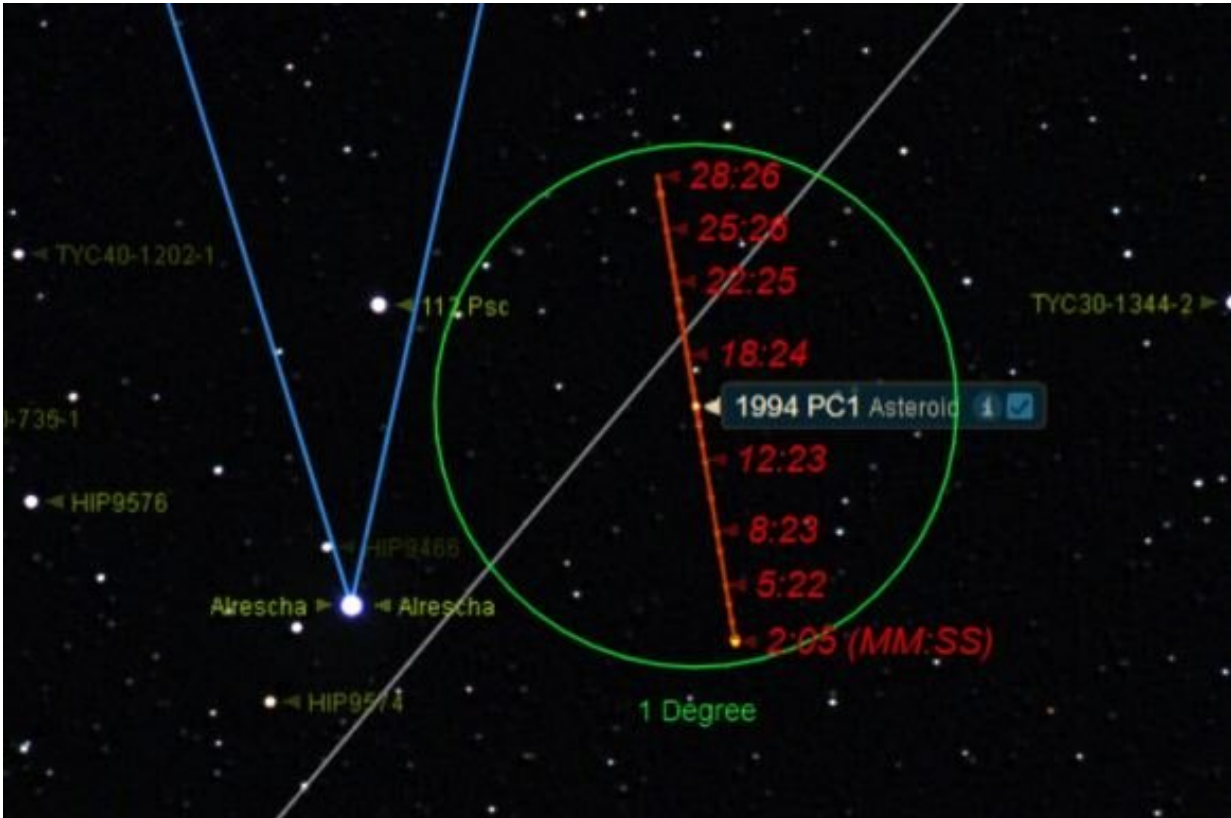
To catch it, you'll need a telescope capable of precisely pointing at coordinates in right ascension and declination. You can get these ephemerides for your time and location by inputting "1994 PC1" at [NASA/JPL Horizons site](#).

The night of Monday, January 17 finds asteroid 1994 PC1 low to the south at dusk on the border of the southern hemisphere constellations of Fornax and Eridanus. Tough, though not an impossible target for North American observers.

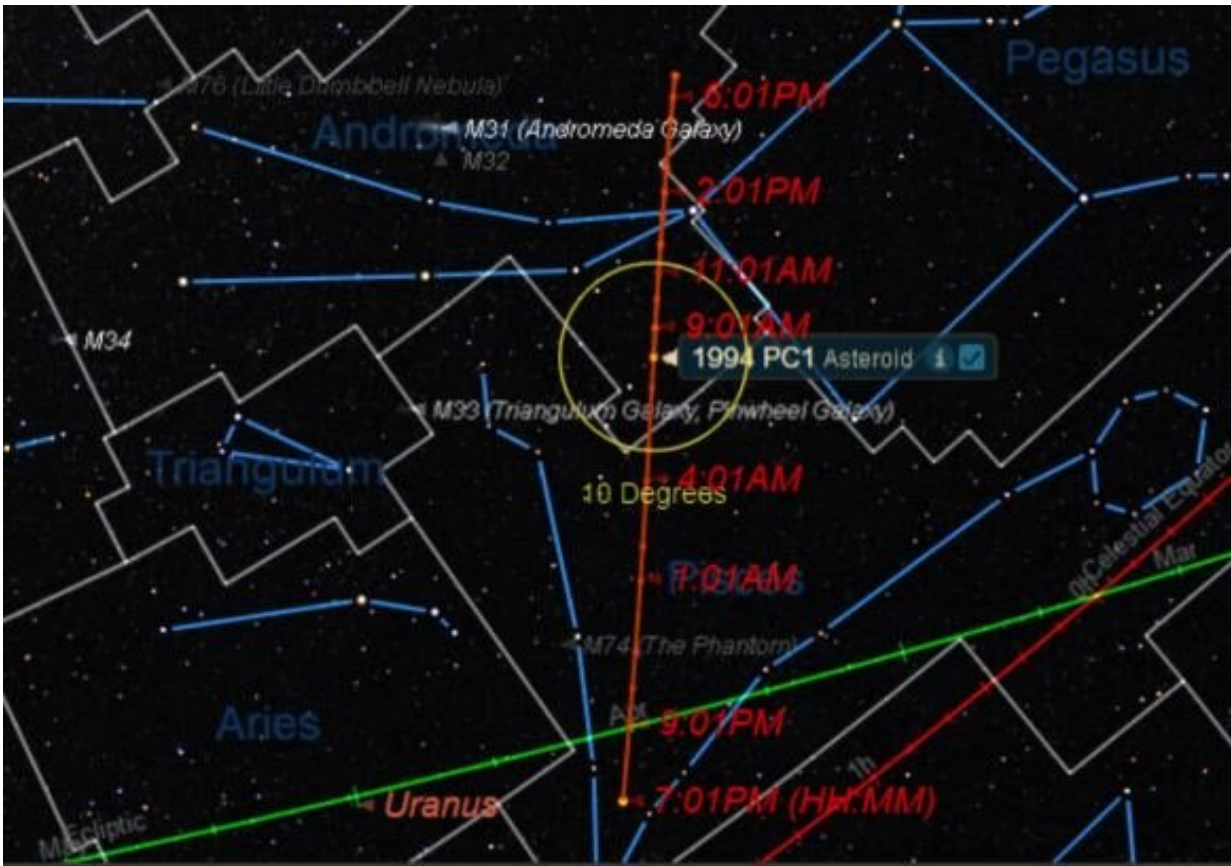
The key night of Tuesday, January 18 sees the asteroid making its closest pass by Earth for this century. Standing on the surface of the asteroid Tuesday night, you'd see the Earth as a 22' half-full disk, slightly smaller than a full moon. Though the precise time of [closest approach](#) favors Africa and European longitudes, North America also gets a good look at dusk. Another good approach to tracking the asteroid is to know when it's going to pass near a bright star, stake out the position, and watch at the appropriate time. Once such opportunity occurs in the hours around 21:05 UT Tuesday night, when 1994 PC1 passes 43' from the +3.8 magnitude star Alrescha (Alpha Piscium).



The 24 hour path of asteroid 1994 PC1 for January 18th, in one hour increments. Credit: Starry Nigh



A close up of the pass near Alrescha (Alpha Piscium) from 21:02 to 21:29 UT.
Credit: Starry Night



The celestial path of asteroid 1994 PC1 through Wednesday, January 19th.
Credit: Starry Night

Wednesday, January 19, sees the asteroid much farther north in the constellation Andromeda. Though the object is almost 1.7 million miles distant, Wednesday also offers a slim window for viewing after twilight ends, and before the waning gibbous moon rises.

Clouded out? Astronomer Gianluca Masi and the Virtual Telescope Project has you covered, with a live webcast following 1994 PC1 starting at 20:00 UT on January 18.

Luckily, asteroid 1994 PC1 won't offer us the same doomday scenario as

the recent comedy "Don't Look Up" ... simply a good show. Good luck and clear skies on your quest to spot asteroid 1994 PC1.

Provided by Universe Today

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