Comet T2 Hits the Big Time

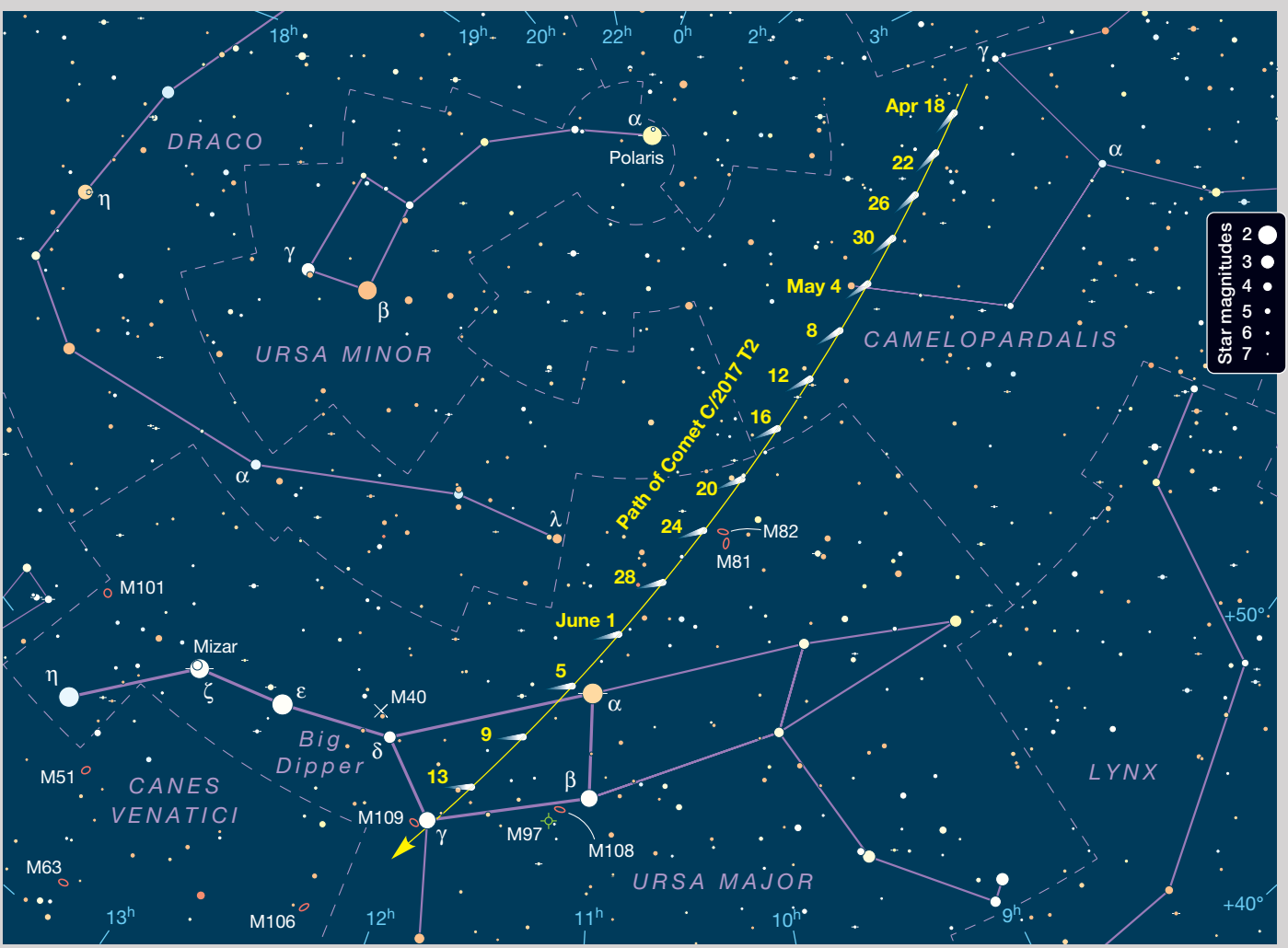
What might prove to be the year's finest comet is at its best in May.

Grab our chart and click on your red flashlight. You'll want to spend a few nights with **Comet PanSTARRS (C/2017 T2)** this month. Now at its brightest, the comet was discovered by the Panoramic Survey Telescope and Rapid Response System (PanSTARRS) in May 2017, when the object was well beyond the orbit of Saturn. Three years later, it finally **reaches perihelion on May 4th**, at distance of 1.6 a.u. (242 million kilometers) from the Sun. Amateurs have been watching T2 slowly blossom from the 14th-magnitude midge it was more than a year ago into a binocular target.

The comet should reach and sustain at least 8th magnitude through May and into June as it ambles southeast from Camelopardalis to Ursa Major.

With a minimum declination of +66°, the comet will be circumpolar and visible all night, even from the southern United States.

As May begins, Comet T2 will be traveling toward the Big Dipper at around 40 arcminutes per day, increasing to 50 arcminutes after mid-month. The chart below shows notable celestial pairings on its route that include the



▲ **TRIPLE TREAT** In January, Comet PanSTARRS (C/2017 T2) shared the field of view with the famed Double Cluster, in Perseus. On May 24th the comet pays a visit to the well-known Ursa Major galaxy pair, M81 and M82.

galaxies M81 and M82 on May 22nd, and a 1° brush with Dubhe, the northernmost of the Dipper's two pointer stars, on June 3rd.

Under a dark, moonless sky the comet will look like a fuzzy, pale blob in a pair of 50-mm or larger binoculars. Telescope users can ferret out delectable details like a tail (which can change in both length and orientation over time) and a bright, misty head or coma — the object's temporary atmosphere of dust and gases released when solar heating vaporizes its volatile ices. Within the coma you can often see what appears to be a starlike center, called the *pseudo-nucleus*; the true, icy nucleus is buried within, obscured by its own dust and gas.

If you use high magnification in your scope to zoom into the coma, you might also detect hints of cometary jets — geyserlike dust plumes erupting from the nucleus. A jet looks like a tiny, low-contrast stub of brighter material extending sunward from the pseudo-nucleus. Activity within and near the true nucleus, especially sudden bursts of dust or episodes of fragmentation, can alter a comet's appearance in short order. This is especially true for "dynamically new" comets like this one, which is making its first trip near the Sun after several billion years locked up in the distant deep freeze of the Oort Cloud.

PanSTARRS is the name given to the survey's twin 1.8-meter Ritchey-Chrétien telescopes, named PS1 and PS2. The PanSTARRS project is operated by the Institute for Astronomy at the University of Hawai'i and receives most of its funding from NASA's Near-Earth Objects Observation Program. Located atop Haleakalā, on the island of Maui, PS1 saw first light in June 2006. With its 3° field of view and 1.4 billion-pixel CCD camera, it can scan 6,000 square degrees of sky every night, covering the entire sky in 40 hours. Its primary mission is to detect Near-Earth Objects (NEOs) that could pose potential impact threats. Along the way, PanSTARRS has swept up numerous asteroids, comets, variable stars, and supernovae — basically anything that fluctuates in brightness or moves!

With more than 200 comets to its credit (as of late January 2020), PanSTARRS has practically become a brand name, making it hard for some of us to keep them all straight! The dual instruments are extremely good at what they do, so expect to see hundreds of additional comet and asteroid discoveries in the years to come.

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