

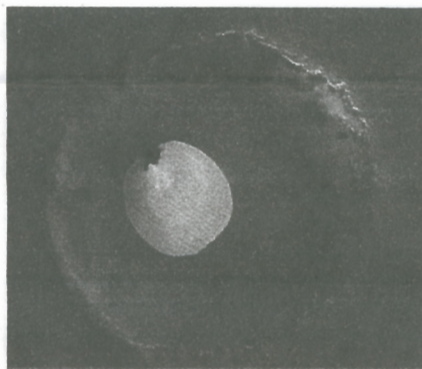
## 'Bigger Than Pluto'

Astronomers estimate a large Kuiper Belt Object they've been studying is big enough to be a planet, and is probably bigger than Pluto. Based on brightness measurements, the object would be at least as big as the outermost named planet in the unlikely event that it is reflecting 100% of the sunlight that reaches it. But it is invisible to NASA's Spitzer infrared space telescope, which can see objects as small as about 2,000 mi. in diameter. The research team believes it is right at that limit, and larger than Pluto's 1,400-mi. diameter. "I'd say it's probably [about] one-and-a-half times the size of Pluto, but we're not sure," says Mike Brown of the California Institute of Technology, who announced the discovery. First photographed in 2003 with the 48-in. Samuel Oschin Telescope at the Palomar Observatory in California, scientists identified object 2003 UB313 as a planet orbiting the Sun when they reanalyzed data in January. Currently estimated at 97 astronomical units (AU) from the Sun (97 times Earth's distance from the Sun), it still can be seen almost directly overhead in the constellation Cetus by backyard astronomers if their telescopes are big enough. And early estimates of its elliptical orbit suggest it will move to within 38 AU of the Sun in about 280 years. Other ground observations have revealed the object to be a fairly typical Kuiper Belt Object, aside from its large size, with an IR signature of frozen water, methane and other gases found in the outer planets. Also participating in the find were Chad Trujillo of the Gemini Observatory in Mauna Kea, Hawaii, and David Rabinowitz of Yale University. The team plans to continue studying the object to gain a better understanding of its characteristics.

## Icy Patch

Scientists are certain to want a closer look at an unnamed crater in the vast plains of northern Mars after Europe's Mars Express orbiter imaged what appears to be a glacial remnant there. Unlike Earthly glaciers, which tend to be

found at higher elevations, the field of water ice at the bottom of a crater 2 km. (1.24 mi.) deep suggests the ice survives year-round because it receives some shade from the crater walls. Ice is also present on the southeast walls and rim of the crater, but not on the opposite side



ESA/DLR/FU BERLIN (G. NEUMANN)

of the feature where the sunlight is more persistent. The spacecraft's High Resolution Stereo Camera (HRSC) collected the image at 70.5 deg. N. Lat., where carbon dioxide ice had already disappeared by late summer. Although altimetry measurements show a difference of 200 meters (656 ft.) between the crater floor and the top of the ice, European Space Agency researchers believe some of that elevation is attributable to a dune field that lies beneath the ice and continues beyond it to the east. The image shown has a resolution of roughly 15 meters per pixel, and is processed in near-natural color.

## Land Launch

One if by land; two if by sea. That's the formula chosen by PanAmSat in multi-launch contracts it has signed to use both land- and sea-based launchers in 2006 and 2007. The Sea Launch Co. will use a version of the Zenit rocket it flies from a floating pad to orbit the PAS-11 communications satellite for PanAmSat from the Baikonur Cosmodrome in Kazakhstan next year. The deal, including options for future Baikonur launches, marks the first contract for Sea Launch's commercial Land Launch venture. Land Launch will use existing Zenit facilities at Baikonur to process

the -3SLB variant of the Sea Launch Zenit-3SL to place satellites weighing 2,000-3,500 kg. (4,400-7,700 lb.) to geostationary transfer orbits. Built by Orbital Sciences Corp. on its Star-2 small geostationary bus, PAS-11 weighs 2,500 kg. After launch in the second quarter of 2007, it is intended for the slot at 43 deg. W. Long. to deliver television service in Latin America. Land Launch is a collaboration between the original Sea Launch venture and Russia's Space International Services Ltd., which adds Moscow-based KBTM Design Bureau for Transport Machinery and TsENKI Center for Ground-Based Space Infrastructure to the original Sea Launch partners RSC Energia of Moscow and SDO Yuzhnoye/PO Yuzhmash of Dnepropetrovsk, Ukraine. Under previously exercised contract options, PanAmSat also designated two payloads—Galaxy 16 and Galaxy 18—for Sea Launch missions. Built by Space Systems/Loral and weighing 4,700 kg. each, Galaxy 16 is to be launched in the second quarter of 2006 and Galaxy 18 is set to go one year later. Both will serve North America and Hawaii from slots at 99 and 123 deg. W. Long., respectively. Meanwhile, PanAmSat says its Galaxy 14 satellite won't be launched from Baikonur on a Soyuz/Starsem rocket until Aug. 12 because of processing problems.

## Space Camp

The Chinese People's Liberation Army (PLA) Air Force is making a bid to capture interest among both women and the country's youth by selecting 35 women directly out of high school to be astronaut candidates. The 35 women, as young as 17, are accomplished high-school graduates who will attend the Aviation University of the PLA. They will receive university degrees, and they also will be trained specifically for careers as pilot and engineer astronauts. The first mission for members of the class is planned by 2010. China already has more than a dozen male astronauts and flew its first manned mission with a single astronaut in 2003. A second Shenzhou manned flight with two astronauts is planned for about October.

Dear Kristen:

On the reverse side of this you can see the discovery of the 10<sup>th</sup> planet.

I also enclose Joy Brandt's letter and the \$20 Dockers she sent.

I hope all is well in Colorado.

You know sometimes I think that you and I are the only people who really believe in every word of the Blue Book.

I look forward in anticipation of what will happen in the next months.

Do you realize that in October I will have been reading the UB for 50 years?

God Bless you

Love

Bud