Our Night Sky in July 2015

Now that Venus and Jupiter are setting shortly after sunset, Saturn is now the only naked eye planet for you to see, and it is low on the southern horizon after dark.

Meanwhile, the New Horizons spacecraft is nearly 2.95 billion miles from home, speeding toward Pluto and its moons at just under 750,000 miles per day. The spacecraft is healthy and all systems are operating normally

New Horizons seeks to understand where Pluto and its moons "fit in" with the other objects in the solar system, such as the inner rocky planets (Earth, Mars, Venus and Mercury) and the outer gas giants (Jupiter, Saturn, Uranus and Neptune). Pluto and its largest moon, Charon, belong to a third category known as "ice dwarfs." They have solid surfaces but, unlike the terrestrial planets, a significant portion of their mass is icy material.

Observations from the spacecraft were made on May 11-12 from a range of 47 million miles (76 million kilometers) using the telescopic Long Range Reconnaissance Imager (LORRI) on New Horizons. For these observations, LORRI was instructed to take 144 10-second exposures, designed to allow a highly sensitive search for faint satellites, rings or dust sheets in the system. The mission team is looking carefully for any indications of dust or debris that might threaten New Horizons before the spacecraft's flight through the Pluto system on July 14; a particle as small as a grain of rice could be fatal.

The observations, downlinked to Earth on May 12-15 and processed and analyzed on May 12-18, detected Pluto and all five of its known moons (Pluto's four small moons -- Styx, Nix, Kerberos and Hydra – and Charon), but no rings, new moons, or hazards of any kind.

The next hazard-search images was taken on May 29-30, and should have about twice the sensitivity of the first batch. The team expects to complete a thorough analysis of the data and report on its results by June 12. The New Horizons team has until July 4 to divert the spacecraft to one of three alternate routes if any dangers are found.

Once it is past Pluto, if NASA approves an extended mission, the spacecraft could head farther into the Kuiper Belt to examine one or two of the ancient, icy mini-worlds in that vast region, at least a billion miles beyond Neptune's orbit. Sending a spacecraft on this long journey will help us answer basic questions about the surface properties, geology, interior makeup and atmospheres on these bodies.

I will keep you informed of the many findings that will be eagerly awaited by scientists all over the world

Bill Turnill