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ASTRO

The Partner School Science Program Newsletter

Meet and Greet Videoconference between Browne Academy
(Virginia, U.S.A) and Izmir Turk College (Izmir, Turkey)



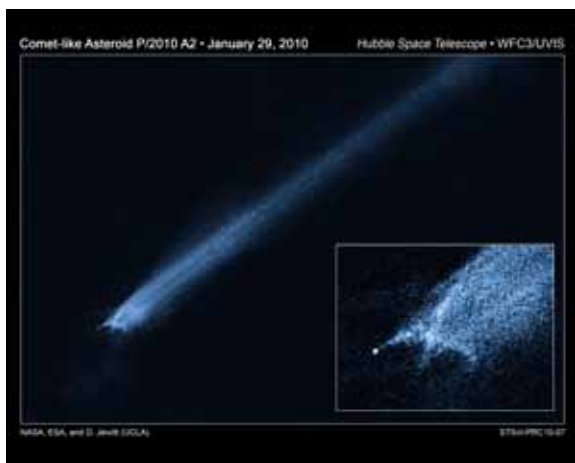
Browne Academy

The first Meet and Greet videoconference between these partners took place on January 21, 2010. During the one hour videoconference, students were able to see and speak to their partners for the first time. The students introduced themselves, talked with their partners, and asked questions to one another. The Turkish students shared their Toys in Space experiments, Mission Patch, and taught Turkish words to their partners.



Izmir Turk College

Suspected Asteroid Collision Leaves Odd X-Pattern of Trailing Debris



This comet-like object imaged by Hubble, called P/2010 A2, was first discovered on January 6. New Hubble images show a complex X-pattern of filamentary structures near the nucleus. "This is different from the smooth dust envelopes of normal comets," says investigator David Jewitt. "The filaments are made of dust and gravel, thrown from the nucleus. Some are swept back by radiation pressure from sunlight to create straight dust streaks. In the filaments are

dust blobs that may originate from tiny unseen parent bodies."

Hubble also shows that the main nucleus of P/2010 A2 lies outside its own halo of dust. This has never before been seen in a comet-like object. Normal comets fall into the inner regions of the solar system from icy reservoirs in the Kuiper Belt. As comets near the Sun, ices near the surface vaporize and eject material from the solid comet nucleus via jets. But P/2010 A2 may have a different origin: it orbits in the warm, inner regions of the asteroid belt where its nearest neighbors are dry, rocky bodies lacking volatile materials.

This leaves open the possibility that the complex debris tail is the result of an impact between two bodies rather than ices from a parent body simply turning into vapor. "If this interpretation is correct, two small and previously unknown asteroids recently collided, creating a shower of debris that is being swept back into a tail from the collision site by the pressure of sunlight," says Jewitt.

The asteroid belt itself contains abundant evidence for ancient collisions that have shattered precursor bodies into fragments. The orbit of P/2010 A2 is consistent with membership in the Flora asteroid family, produced by collisional shattering a few hundred million years ago. (One fragment of that ancient smashup may have struck Earth 65 million years ago, triggering a mass extinction that wiped out the dinosaurs.) But, until now, no such asteroid-asteroid collision has been caught "in the act."

In two weeks you will receive your last Astro for the 2009-2010 school year. This will be your last chance to submit photos of your school and your projects. Send information to tyildirim@gftse.org.