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ENDEAVOUR shuttle mission, August

Astronaut/teacher Barbara Morgan (55) fulfilled the legacy of the *Challenger* colleague for whom she had been a backup astronaut in 1986 and who died, with her 6 colleagues, when the shuttle exploded shortly after launch..

Endeavour was launched on 8/8. Mission took 13 days. It flew over 8 mln km and completed 201 orbits. Some repairs carried out to the ISS, some new parts attached, 5000 pounds of equipment and supplies unloaded. It landed safely in Florida on 21/8, after Mission Control had decided that the damage on the heat shield, caused by a loosened piece of foam during launch (= cause of *Columbia* disaster in 2003), formed no threat.

Future: So far around 120 shuttle flights since 1981. Next flights planned for 23/10, 6/12 and 14/2. Flight nr 133 in July 2010 will be the last. A new and better (and cheaper?) orbiter will be developed, the *Crew Exploration Vehicle*, planned to have its first flight in 2014. Between 2010 and 2014 all transport to/from the ISS will have to be done by the Russian *Soyuz*.

MARS

- *Opportunity* (one of the two Mars Rovers launched in 2004) is now about to enter *Victoria crater* Risky! On 11/9 it went in very carefully for some meters, and then back again! Hopes to study the crater's walls, trying to find (further) proof that water once existed on Mars.
- Enormous dust storms on Mars in July caused darkness → no solar power, Rovers just survived (dust storms occur when Mars is nearest to the Sun → large temperature differences → strong winds, blowing up the abundant dust).
- Geomorphological structures discovered on photographs looking like former long coastline. Coast of former ocean?
- On 4 August the *Phoenix Mars Lander* was launched, planned to land in the North polar region of Mars in May next year, in order to study ice just below the surface.

EXTRA-SOLAR PLANETS / ET-LIFE

- in July water vapour was detected on a hot planet about 63 ly away, by analysing the infrared light around the planet while it was passing in front of its star. So water *can* exist on ES planets.
- in August the largest ES planet so far was discovered - as a transiting planet, 70% bigger than Jupiter, 1400 light years away It orbits very closely around its star in 3.5 days and when transiting its star (as seen from Earth) it blocks about 1% of the star's light.
- it has also been discovered that ES planets sometimes orbit a system of two or three stars.

ASTEROIDS

Tunguska

Strange thing about the *Tunguska* event (large asteroid which exploded above the Siberian tundra on 30/06/1908) was that never any fragment of the asteroid or an impact site was discovered. Now Italian scientists from the University of Bologna have discovered a small circular lake, up to 50 meters deep, which may fill an impact crater. They will return next year to try and find out more about it.

NASA and Near Earth Objects (NEO's)

It appears that NASA is (secretly) developing plans to *destroy* approaching dangerous NEO's by huge nuclear explosions, instead of trying to change their speed or course. This despite the fact that many specialists say that destroying is much more dangerous → many pieces will fall on Earth.

Peru impact

On 15th September a meteorite crashed in a remote part of Peru, close to the Bolivian border. It caused a crater about 5 metres deep and 25 metres wide. No casualties, but many people in a neighbouring village fell ill. Cause unknown (so far).

Relatively small impact, but imagine the disaster if it had come down in a crowded area or city.