



Pluto photographs thrill Nasa scientists after nine-year mission

Nasa spacecraft makes history as the first spacecraft to reach distant dwarf planet, the last unexplored world in solar system

- 1) Cheers, whoops and flag waving broke out at Nasa's New Horizons control centre as scientists celebrated the spacecraft's dramatic flyby of Pluto, considered the last unexplored world in the solar system.
- 2) The probe shot past at more than 28,000mph (45,000 km/h) at 12.49pm BST (7.49am ET) on a trajectory that brought the fastest spacecraft ever to leave Earth's orbit within 7,770 miles of Pluto's surface.
- 3) The moment, played out on Tuesday to the sound of The Final Countdown by the 1980s glam metal band Europe, marked a historic achievement for the US, which can now claim to be the only nation to have visited every planet in the classical solar system.
- 4) "It feels good," said Alan Stern, lead scientist on the mission. "So many people put so much work into this around the country. We've completed the initial reconnaissance of the solar system, an endeavour started under President Kennedy."
- 5) John Grunsfeld, head of Nasa's science mission directorate, said that images beamed back from New Horizons on its approach showed Pluto to be an "extraordinarily interesting and complex world". "It's just amazing. It's truly a hallmark in human history," he said of the encounter with Pluto. "It's been an incredible voyage." 中略
- 6) Bristling with cameras and other instruments, the New Horizons probe was programmed to gather a wealth of images and data as it sped past Pluto and its five small moons, Charon, Styx, Nix, Hydra and Kerberos.
- 7) Images beamed back from New Horizons have shown Pluto in shades of red and orange, with hints of valleys, mountains and craters. On Tuesday Nasa released a new image of Pluto. The picture was taken at about 9pm BST (4pm ET) on 13 July, about 16 hours before the moment of closest approach. The spacecraft was 476,000 miles from the surface.
- 8) Though Pluto has a varied terrain, with dark patches on the equator and brighter regions to the north, its surface looks younger and smoother than that of its largest moon, Charon. The reason may be geological activity, which refreshes the body's surface. 中略
- 9) New Horizons blasted off in January 2006, carrying the ashes of Clyde Tombaugh, the astronomer who discovered Pluto in 1930. Several months later, astronomers at the International Astronomical Union voted to change the definition of the word "planet", a move that downgraded Pluto to the more diminutive "dwarf planet". The flyby may resurrect the debate and see Pluto restored to full planetary status. 中略
- 10) Pluto lies in a region of space at the edge of the solar system called the Kuiper belt. Astronomers call it the third zone of space. The first zone contains the rocky, terrestrial planets of Mercury, Venus, Earth and Mars. The second zone is home to the gas giants, Jupiter, Saturn, Uranus and Neptune. Alongside the Pluto system in the Kuiper belt are comets and more than 100,000 miniature worlds.
- 11) New Horizons is expected to continue its mission into the Kuiper belt. The spacecraft is powered by a nuclear generator that runs on plutonium, a substance named after the dwarf planet. The generator should run until the 2030s, when New Horizons will be 100 times further away than Earth is from the sun. 【14 July 2015 / The Guardian】

whoop:(喜びや興奮の)叫び声、うわー flyby:(宇宙船の天体への)接近通過 trajectory:(惑星等の描く)曲線 directorate:理事会 terrain:地形 resurrect:(習慣等を)復活させる

★Ice breaker for active discussion★

1. What do you think is the significance of the new horizon's mission?
2. Do you think the New Horizons will successfully continue its mission?
3. Why was Pluto degraded from the status of a planet? What do you think of the decision?
4. If you were to pick music to mark a historical achievement, what would it be?
5. If given the chance, would you like to travel the space?
6. Make sentences using the following words: trajectory, terrain surface, solar system, astronomy and resurrect.

打ち上げから9年半、無人探査機「ニューホライズンズ」が、冥王星の最接近地点を通過した。今後16ヵ月かけて、太陽系の成り立ちに迫る発見につながる画像やデータが送られてくることが期待される。太陽系惑星は国際天文学連合(IAU)が①太陽の周りを同じ軌道で回っている②自分の重力によってほぼ球形を保つのに十分な大きさがある③軌道の近くに衛星以外の星がない。という3の条件で定義している。