A memorable tee-off, that!

FORTY YEARS OF APOLLO 14 On February 9, 1971, manned lunar mission Apollo 14 returned to earth. The mission generated great interest back then, particularly after the near-failure of Apollo 13. Also, the mission is remembered for commander Alan Shepard's attempt at golf, writes **C Sivaram**

Forty years ago, on February 9 1971, Apollo 14, the manned lunar mission returned to earth, the command module (named Kitty Hawk after the first powered plane of the Wright brothers) carrying the three astronauts splashing down into the Pacific Ocean. The previous flight, Apollo 13, lived up to the *triskaidekaphobic* tradition (associated with number 13!) by being a near disaster during its way to the moon, in April 1970, when an explosion crippled the mission putting the astronauts (lead by Jim Lovell) in great danger. However they managed to make it back to earth alive. Apollo 13 acquired much notoriety because of this.

Following this, it was nearly a year before NASA was confident enough to launch its next manned mission to the moon, when on January 31, 1971, Apollo 14 was launched. It was commanded by Alan Shepard, who was one of the Mercury Seven astronauts and famous for making the first American manned flight into space (although a sub-orbital one), ten years earlier in 1961. After this he was grounded for several years due to inner ear problems. Many medical checks later, he regained his flight status and finally commanded Apollo 14 at the ripe age of 47.

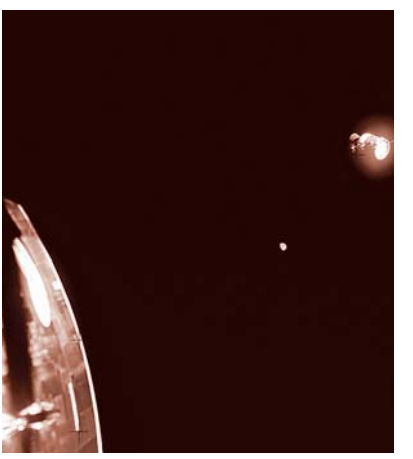
The Lunar module pilot was Edgar Mitchell. The craft which would actually carry Shepard and Mitchell onto the lunar surface, i.e. the lunar module, was named Antares. The command module, the craft which would carry all three astronauts while orbiting the earth and moon, was named Kitty Hawk and commanded by Stuart Roosa.

Post-Apollo 13-near disaster

After the near disaster which befell Apollo 13, there was lot of interest in Apollo 14. The launch was delayed owing to passing dark storm clouds for over an hour. The launch to earth orbit was smooth much to Shepard's relief. However, just three hours into the mission with the Saturn S-IVB upper stage and Apollo module about to start for the three-day trip to the moon, problems arose concerning the docking of Antares with Kitty Hawk in orbit. The docking manoeuvre did not succeed even after five attempts by Roosa to ease the tip of Kitty Hawk onto the top of Antares, the two spacecraft sliding apart each time.

Finally, after two tense hours, in the sixth attempt, Kitty Hawk docked with the lunar module and Apollo 14 entered lunar orbit on February 5.

The astronauts touched down on the lunar surface at the designated Fra Mauro site, which was a highland area that was to have been explored by Apollo 13.



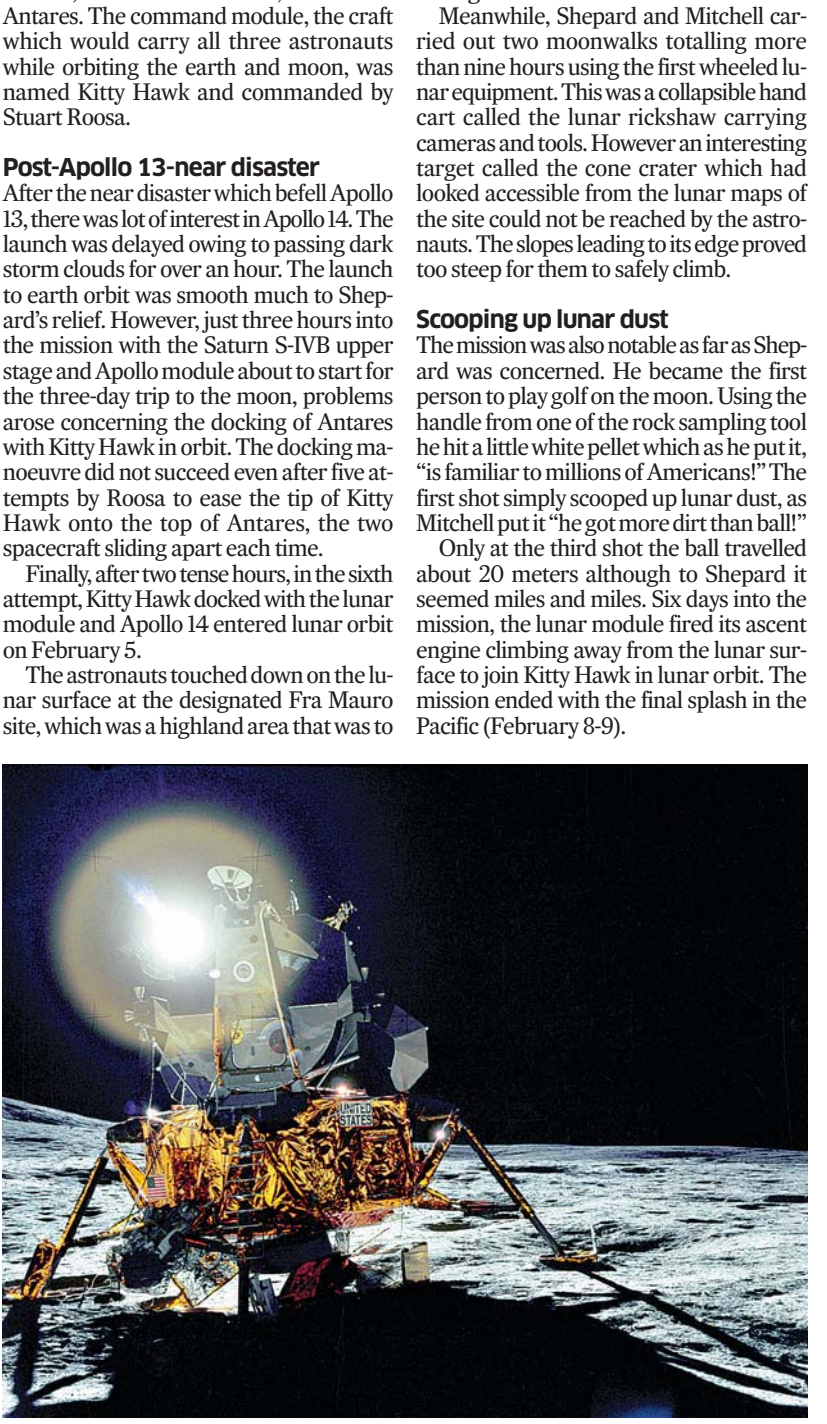
Around the site, the terrain was littered with debris from ancient meteorite impact which created the Mare Imbrium. Rock fragments had been fused by heat and pressure into breccias which themselves were formed from earlier breccias, implying violent origins of Fra Mauro site. The S-IVB booster stage discarded earlier impacted the moon (something like a forerunner to the recent LCROSS mission which impacted the Cabeus Crater). The impact was registered by the seismometer left behind on the moon by Apollo 12 during its mission during November 1969.

Meanwhile, Shepard and Mitchell carried out two moonwalks totalling more than nine hours using the first wheeled lunar equipment. This was a collapsible hand cart called the lunar rickshaw carrying cameras and tools. However an interesting target called the cone crater which had looked accessible from the lunar maps of the site could not be reached by the astronauts. The slopes leading to its edge proved too steep for them to safely climb.

Scooping up lunar dust

The mission was also notable as far as Shepard was concerned. He became the first person to play golf on the moon. Using the handle from one of the rock sampling tool he hit a little white pellet which as he put it, "is familiar to millions of Americans!" The first shot simply scooped up lunar dust, as Mitchell put it "he got more dirt than ball!"

Only at the third shot the ball travelled about 20 meters although to Shepard it seemed miles and miles. Six days into the mission, the lunar module fired its ascent engine climbing away from the lunar surface to join Kitty Hawk in lunar orbit. The mission ended with the final splash in the Pacific (February 8-9).



TO THE MOON AND BACK **A view of the Apollo 14 lunar module which reflects a circular flare caused by the sun, as seen by the two crewmen of the mission. Top: A damaged portion of the Apollo 13 mission** NASA IMAGES

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