

## March Meeting

Topic: "Creating New Lunar Images"

Speaker: Rob Godwin, Space Curator of the Canadian Air & Space Museum

Reporter: Gord McNulty

CAHS Toronto Chapter President George Topple introduced Robert (Rob) Godwin, a multi-talented space expert, music/film producer, author and publisher. Born in England in 1958, Rob was educated at St. Oswald's College in Shropshire where he studied mathematics and physics. In 1975, Rob attended a Led Zepelin concert in London, which began a life-long obsession with the band. The same year he briefly worked as a member of the road crew for the rock band "Scorpions." He moved to Canada in 1978 and took over operational management of a chain of 11 English pubs. In 1981, he established the most popular night club in Canada, the Orient Express, in Burlington. In 1982, Rob co-produced an outdoor concert in Canada which attracted more than 20,000 people. Later in 1982, he was asked to fill a vacancy at George Brown College and taught a course in management under a one-year contract. Moving into music management in 1983, Rob helped some of the artists who had played at his club to get worldwide recording contracts. Going from management into production, he assisted in the recording of several popular albums and worked at Musicland Studios in Munich, Germany, Metalworks in Toronto, as well as Sunset Sound and United Western in Los Angeles.



Speaker: Rob Godwin

*Photo Credit - Neil McGavock*

In 1984, Rob turned his love of Led Zepelin into the first of a long line of books about the band. He quickly became recognized as one of the world's leading experts on the subject. He followed up with a series of books on other artists who interested him, including the archetypical British space-rock group Hawkwind. In 1987, Rob opened his own record label, Griffin Music, which by 1992 would be voted best independent label in America by several major U.S. newspapers. Over the next few years, Griffin Music would release many classic rock act's back catalogues. By 1995, Rob sold his interest in Griffin and briefly dabbled in the merchandising business, where he acquired a coveted licence from Lucasfilm to manufacture memorabilia. Later that year, he incorporated his private publishing company, Collector's Guide Publishing, and went into full-time publishing. Rob began to sign up authors and subsequently published and edited dozens of books on many aspects of pop culture. These books won accolades from around the world and have sold in at least 80 countries.

In 1998, Rob was invited by his brother, Richard, to attend a celebration in honour of the crew of Apollo 7. During that event, Apollo astronaut Edwin (Buzz) Aldrin asked Rob to publish a book to honour his fellow astronauts and to commemorate man's first voyage to the moon. Working with advice from his friend, noted space author Andrew Chalkin, he launched a space imprint. In partnership with his brother, Rob has subsequently worked with almost every surviving Apollo astronaut on his acclaimed book series, 'The NASA Mission Reports.' Rob's space series has

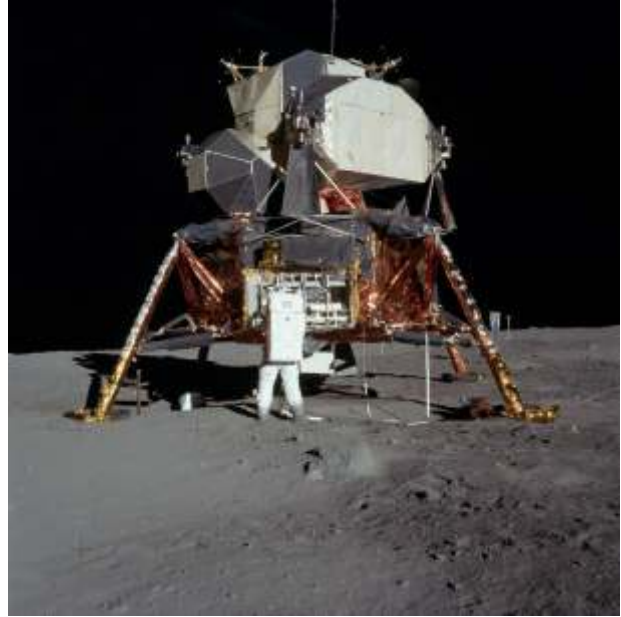
included contributions by Sir Arthur C. Clarke, Tom Hanks, Neil Armstrong, Buzz Aldrin, Ron Howard, Senator Harrison Schmitt, Eugene Cernan, Wally Schirra, Dave Scott, Walt Cunningham, Dr. Marc Garneau, Eileen Collins, Bonnie Dunbar and many more astronauts and space scientists. Rob created the first-ever Virtual-Reality digital panoramas from the Apollo lunar photography and his acclaimed film Apollo 11 – Moonwalk was the first time that the Apollo 11 mission was shown from multiple camera angles simultaneously.

Rob has appeared on dozens of radio and television programs in Canada, the U.S. and England as an expert not only on music, but also space exploration. His books have been discussed on CNN, the CBC, the BBC and CBS' 60 Minutes. In 2001, Rob's company co-sponsored a party at the Playboy Mansion in Los Angeles to honour Sir Arthur C. Clarke. In attendance were movie directors James Cameron and Oliver Stone, actors Patrick Stewart, Bill Paxton and Morgan Freeman, astronauts Buzz Aldrin, Jim Lovell and Robert Crippin as well as many other celebrities from different walks of life. A film about the history of science fiction and space exploration, directed and created by Rob, was one of the evening's highlights. Today, GC Publishing, through its imprint, Apogee Books, is the world's number one publisher of space books, creating an average of one new space book a month. GC Publishing has garnered contracts to document aspects of space history from both NASA and the Russian space corporation, Energia. Rob works regularly with many of the world's leading space advocacy groups including The National Space Society, The Space Frontier Foundation, The Mars Society, The X-Prize Foundation, The British Interplanetary Society, The Planetary Society, Space Day and many more. Through revenues from the sale of their books, Rob and Richard have donated funds to an asteroid impact research project called The Watch, which led to Apogee Books sponsoring a U.S. Senate round table on the subject of catastrophic impacts. The round table raised awareness on the subject and assisted in more long-term funding for asteroid research. Rob continues to work closely with NASA and spends time editing and writing. In November of 2007, the IAU Working Group for Planetary System Nomenclature honoured Rob and his brother by naming a main asteroid belt "4252 Godwin." Rob, Space Curator for the CASM, also handles the CASM's media relations and is the principal negotiator with Downsview Park. He is currently writing a book on the crossover between popular culture and space exploration.

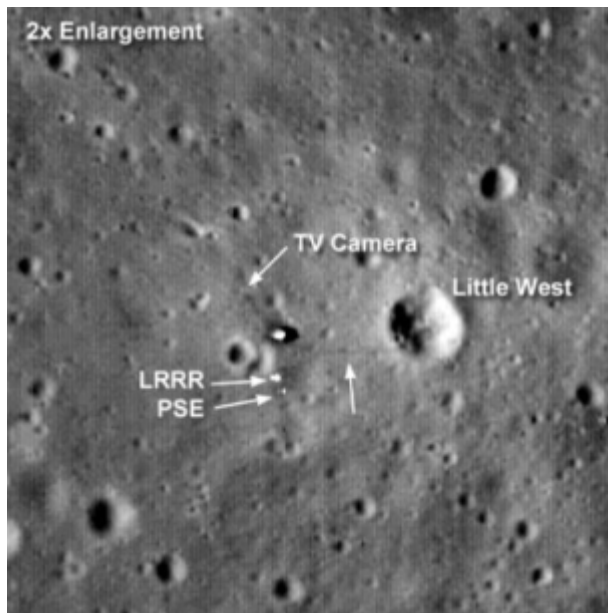
Rob's father, Ian, was in the RAF in the 1950s and worked on the Berlin Airlift among other things. He attended the presentation with Rob's son, Dayne, who got an internship to work with legendary American aerospace engineer Burt Rutan's Scaled Composites firm in California. Rob began by describing a project that he's been working on for three years. Back in 1999, when the 30<sup>th</sup> anniversary of the Apollo 11 moon landing in July, 1969, by astronauts Neil Armstrong and Buzz Aldrin was honoured, Rob had been working with NASA to digitize the photography taken on the lunar surface. As Rob said, "That was a big deal then." The photos were still in climate-controlled refrigerators in Houston and NASA was reluctant to have the photos scanned. The cameras used on the mission included a Maurer 16 mm movie camera, which used a special, very light type of film to save weight when every ounce of weight was critically important; a Hasselblad 70 mm still camera; and an RCA black- and-white TV camera, upgraded to a Westinghouse-built colour TV camera. The ultimate upgrade, an RCA colour TV camera, was mounted on the front of the four-wheeled lunar rovers for Apollo 15, 16, and 17. With features such as power tilt, yaw and zoom, it produced spectacular results as it followed the astronauts. It was controlled on the ground by Ed Fendell at Mission Control.

Rob showed beautiful panoramic images of the moonwalks, providing a unique guided tour of the Apollo landing sites. Once Rob had Adobe Photoshop photo editing software, NASA was willing to scan the pictures for him. NASA sent the digital scans to Rob and the results were nothing less than

spectacular. Rob started with a panoramic image created from about 25 different still photos, including what he described as the only good photograph of Neil Armstrong on the moon. All of the other Apollo 11 lunar still photos are of Buzz Aldrin. Rob then fast-forwarded to show the latest images from the Lunar Reconnaissance Orbiter, a NASA robotic spacecraft which is currently in orbit around the moon. The technology is so advanced as to identify the spot where Aldrin stood as he took the photos, and also Armstrong's footprints as he moved to Little West Crater while he and Aldrin explored the surface. Rob, using Photoshop, was able to stitch together a partial panorama of images of the Tranquility Base landing site. The images, taken from the black-and-white TV camera, showed the two astronauts as they ventured about.



Buzz Aldrin in front of Lunar Lander - Apollo 11  
*Photo Credit - Neil Armstrong & NASA*



Apollo 11 Close-Up view of Tranquility Base  
*Photo Credit - NASA*

satellite imagery taken recently; and video screen captures. Shepard and Mitchell planned to go farther from the lander than anyone had, and for life support they relied on what was known as the BLSS --- the buddy life support system --- a modification of a system that had been invented for scuba diving. It was a distance of about four kilometres to the 1,000-foot (300-metre) wide Cone Crater, which was believed to possibly have had volcanic origins.

On the Apollo 12 mission, in November, 1969, lunar exploration was done by astronauts Charles "Pete" Conrad and Alan Bean. It was an exercise in precision targeting, as Conrad succeeded in landing within 500 feet of the intended landing site, and also in adventurous exploration. The two astronauts went so far that they appeared to be partially "over the horizon" --- in actual fact a local ridge. The Apollo 14 mission, where astronauts Alan Shepard and Edgar Mitchell made a lunar landing in February, 1971, was the first time that a colour TV on the moon actually lasted for a few minutes. It provided some excellent footage and pictures that thrilled geologists. About a year ago, the Lunar Reconnaissance Orbiter took images of the Apollo 14 site, which Rob put together to capture details on every little crater and every little scrap of "junk" left behind. The details are the same, Rob noted, in the still pictures; the Lunar Reconnaissance Orbiter



# MET 147:15:19 - 147:45:35 & 163:46:35 - 164:11:07 EVA 2 Closeout and EVA 3 Load Up

This panorama was filmed by Ed Fendell from the television camera onboard the rover. It is composed of over 100 scene captures and is unusual for its closeup view inside the rover. This happened almost by accident as the camera was stowed for the night by Gene Cernan. The TV camera was mounted on the very front end of the rover and consequently the view is severely distorted and fuzzy in places but does show the battery covers (Strogosaf), the footrest (warped foreground) followed by the striated floor grid. This composite captures various different moments during the offload at the end of EVA 2 and the onload prep for EVA 3. The right hand seat (nearest the LM) is partially obscured by a sample collection bag which was suspended from the navigation console (white box with cable hanging). Both seat storage lids are down. The Earth can be seen hanging in the South and Cernan is at right holding a brush which he has just used to clean the TV camera lens. Jack Schmitt can be seen approaching from the LM with his sun visor half raised. The pan is centred on East.



Jack Schmitt starts to clean off their seats.



During the closeout of the second EVA, which had lasted over 7 1/2 hours, Cernan took several moments to photograph the North and South Massifs using the 500mm lens on his still camera. He would shoot two separate high resolution panoramas of each of the mountain ranges.



The rover battery covers can be seen here. They appear distorted by the proximity of the camera.

TV CAMERA HOIST

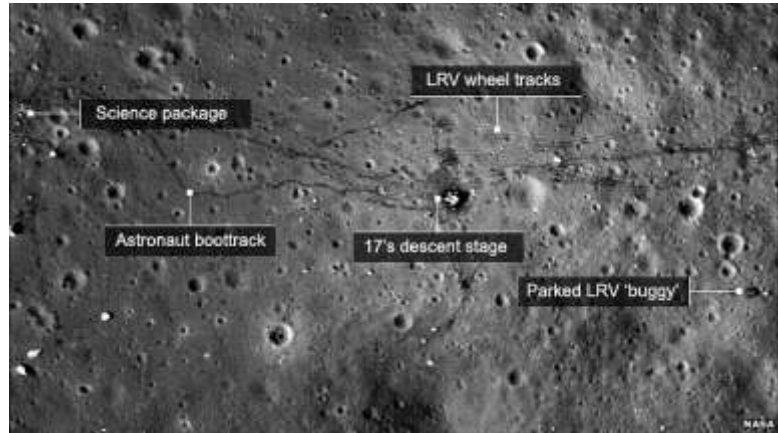
“One of over 100 panoramic images included in Robert Godwin’s ‘New Horizons’ gift set. This one is a previously unseen image taken from the television footage showing the Apollo 17 landing site. ©2012 Apogee Prime”

Rob put together images taken from the window of the Apollo 14 lunar lander to see if everything matched up with the high-resolution satellite imagery. Among other things, he identified a golf ball that Shepard hit with a makeshift golf club, a little crater with the TV camera set up next to it, the orange antenna, footprints and more. It all fit for a composite picture. One of the curiosities, however, involved the American flag, planted on lunar soil. Two frames in particular were noteworthy and they generated quite a controversy. In one frame, the Stars and Stripes was pointed to the right, while in another frame, it was pointed in another direction --- to the left. The big orange antenna that Shepard and Mitchell used to communicate with Earth had also disappeared from one frame to the next. Rob concluded the movement of the flag and the antenna resulted from the rocket thrusters being test-fired before the lunar lander lifted off. He casually mentioned to a reporter that skeptics who believed the manned lunar landings were a hoax would have a field day with this information. Conspiracists and skeptics would be sure to question how the flag could be blowing in the wind when there isn't any atmosphere on the moon.

The wheels did come off, so to speak. Lo and behold, as Rob recalled, a media firestorm erupted over the story about a Canadian who was fuelling the idea that the lunar landings were a hoax. The problem, Rob recalled, started when Fox News in the U.S. just ran the first half of the story when he was explaining the pictures. It didn't run the second half outlining his conclusions as to what had actually happened. “They did this deliberately,” Rob said. He received hundreds of e-mails from across North America calling him everything from “a traitor” to “a moron.” He had to request Fox to finally print a retraction, which they did. The story certainly created waves, as Rob said that at one point it ranked above Charlie Sheen’s 'meltdown.'

The Apollo 15 crew, in July, 1971, used the first Lunar Rover. It enabled astronauts Dave Scott and James Irwin to travel much farther from the lunar lander than had previously been possible. As they ventured out, with the TV cameras rolling, it became possible to get depth perception. Other than the astronauts and the lander, there were no other features in the barren landscape to estimate distance and calculate exactly where the astronauts were. The Apollo 15 landing site was most interesting for Rob. Scott and Irwin ran off to the bottom of Mount Hadley and started taking pictures that showed the lander in the distance, boulders, rocks and other objects of interest. Rob sent his panoramic

images, which featured beautiful resolution, to the Lunar Planetary Institute in Houston. The astronauts went as far as seven or eight miles from the landing site. Rob said he had “no idea that they were that far away from the landing site, virtually out of sight of the place.” It showed remarkable courage on their part. The two astronauts set up a lunar experiments package and did extensive experimentation.

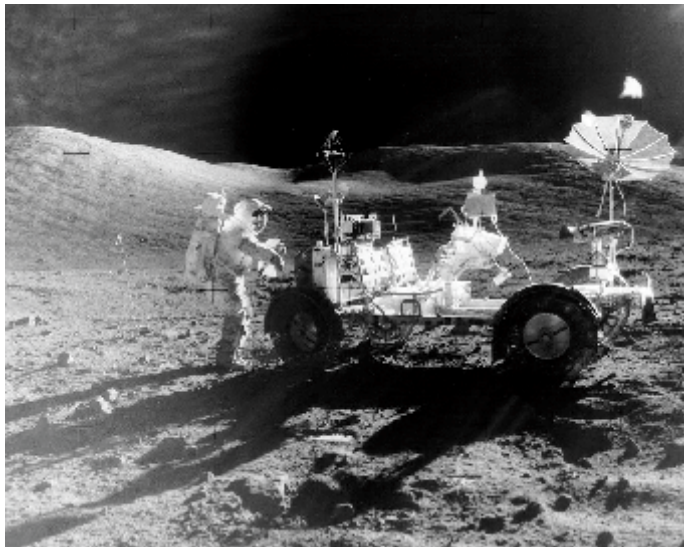


Apollo 17 Landing Site as photographed by the Lunar Reconnaissance Orbiter in 2011

*Photo Credit - NASA*

Scott also made one of the most important discoveries of the Apollo

program. While sampling boulders and craters, he discovered the “Genesis Rock.” It was formed in the early days of the solar system, at least four billion years ago. One of the still photos featured Scott saluting the flag with the lander behind him. The astronauts were able to film the landing site from the window as they were landing, and every footprint, every crater, matches the lunar reconnaissance imagery taken last year. Scott also performed an experiment with a feather and hammer to test Galileo's theory that, in the absence of wind resistance, two objects will fall at the same rate regardless of how much they each weigh. To test this, Scott dropped the hammer and the feather at the same time. Because of the vacuum present at the lunar surface, they hit the ground at the same time, thus confirming Galileo's hypothesis. The astronauts also set up a memorial to the astronauts and cosmonauts who were known to have died up to that time. A plaque had the names of all the fallen spacemen.



Astronaut Harrison Schmitt - Apollo 17 Lunar Rover

*Photo Credit - NASA*

Moving to the Apollo 16 mission, in April, 1972, Rob showed impressive photos of mission commander John Young moving around in the pristine environment and the famous picture of him jumping up as he saluted the flag. The photos underlined how small and insignificant the astronauts were in the lunar landscape. Rob wrapped up with Apollo 17, in December, 1972, the final Apollo lunar landing. Beautiful colour television pictures showed lunar module pilot Harrison Schmitt exploring the lunar surface with his visor up so that he could see the colour of the orange soil which they found.

George Toppie, on behalf of the Chapter executive and members, expressed his appreciation to Rob for a great presentation. Bob Winson presented Rob with a book as a gift from the Chapter. Rob's meticulous presentation was enjoyed by all and it reflected a lot of effort. His work has been rightly described as a superb new contribution to lunar studies and an "Apollo geek's dream." After his talk, Rob brought the Chapter up-to-date on the problems at the CASM, evicted last September from its Downsview hangar by Parc Downsview Park. The relocation issue has been a difficult and frustrating exercise for the museum staff, volunteers and members. The latest 2012 issue of Heritage magazine, (vol. XV, No. 1) published by the Ottawa-based, non-profit Heritage Canada Foundation, has a full-page story on the issue, headlined "Historic Downsview Hangar and its Aviation Museum at Risk." The story is illustrated with a photo of the Silver Dart replica outside the hangar. There is also a full-page French language version of the same story, illustrated with a picture of the Avro Arrow replica outside the hangar.

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