
WINTER COURSE, 2021
Jan 8, 15, 22, 29, Feb 5, 12

HUMANS AND SPACE

Dr. Thomas Stiff is a science educator and lecturer who has held research and consulting positions for national and international organizations including the Canadian Space Agency, the National Research Council, and Space Center Houston. He holds a MSc in Physics and a PhD in Theoretical Astrophysics.

Jan 8: *The Race for Space – The Politics and Science of the ‘Final Frontier’*

In the 1950’s the Soviet Union shocked the free world with the successful launch of Sputnik 1. This talk will reveal the technical and political battles that dominated the subsequent race to the Moon and their impact on modern society. The space race continues today but between mega-corporations. The new goal is to return to the Moon and then on to Mars. Why are we going back, and what’s at stake?

Jan 15: *From Tang to Tricorders – Inventions and Innovations for Space Technology*

For more than 50 years NASA and its R & D contractors have been producing products and services for the Space industry, including those required for life aboard the International Space Station. Many of these products and technologies find their way into our homes and everyday life every year. This talk will discuss a few of NASA’s most important “spin off” technologies, and introduce some of the products currently under development, including solar powered electric airplanes and nanobots designed to enhance human surgical procedures.

Jan 22: *Canadians in Space – From Training to Touchdown*

Dr. Williams will discuss his career, including what it takes to be an astronaut and what it’s like to live and work in space.

Guest Lecturer: Dr. Dave Williams is an astronaut, aquanaut, jet pilot, ER doctor, scientist, and CEO. He has flown to space on two space shuttles, logging over 13 million kms. in space and over 17 hours of spacewalks. He has lived and worked on the world’s only undersea research habitat, and is the recipient

of six honorary degrees, the Order of Canada, and the Order of Ontario. Dr. Williams was Director of The Space & Life Sciences Directorate at the Johnson Space Center in Houston, Texas, and is currently the Director of the Centre for Medical Robotics at McMaster University.

Jan 29: *A Manned Mission to Mars*

No longer the stuff of science fiction, NASA’s Mars Exploration Program could see humans on Mars by the 2030’s. Who will go? How will they cope with the long journey, and what will life be like when they get there? What technology is required for long term flight, and what resources are necessary to sustain life on Mars?

Feb 5: *Space Suits and Cinema – Getting the Space Science Right (and wrong!) in the Movies*

From 1902’s “A Trip to the Moon” to 2018’s “First Man”, filmmakers have depicted living and working in space, with various degrees of success. Pop culture can be an excellent vehicle for sharing information about space but what happens when false claims, or unscientific “facts” are introduced to millions of viewers? Who got the science right? Why does it matter?

Feb 12: *Hello?...Is There Anybody Out There?*

Is there life on other planets? Do we have the technology to determine whether other intelligence exists? The Search for Extraterrestrial Intelligence Institute uses a variety of technologies to search for interstellar communications. While Area 51 inhabitants, alien invasions, and little green men are definitely NOT on the radar, what DO we know right now, and how do we know it?

Guest Lecturer: Paul Delaney, BSc, Canberra and MSc, Victoria, has worked as a nuclear physicist for Atomic Energy Canada and a support astronomer at the McGraw Hill Observatory near Tucson, Arizona. He is currently a Professor in the Department of Physics and Astronomy at York University, and the Director of the Campus Allan I. Carswell Astronomical Observatory in Toronto.

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