

# International Lunar Observatory Association (ILOA) 2007

Steve M. Durst, Space Age Publishing Company / ILOA  
Hawai`i and California, USA



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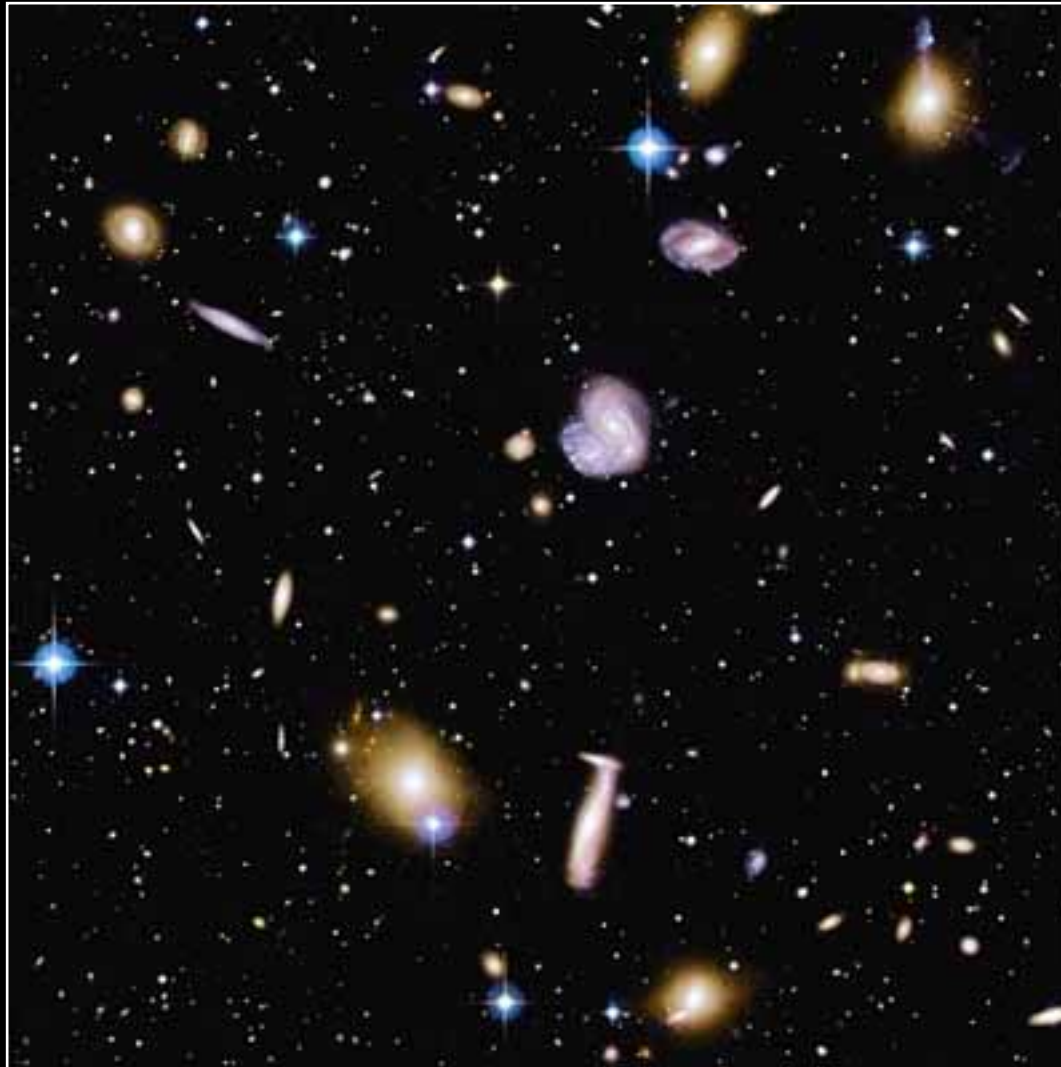
- **Inter-Stellar**
- **Inter-Global**
- **Multi-Functional**
- **Hawai`ian**

# ILOA – 2 Missions

## ILO / Human Service Mission



# Inter-Stellar



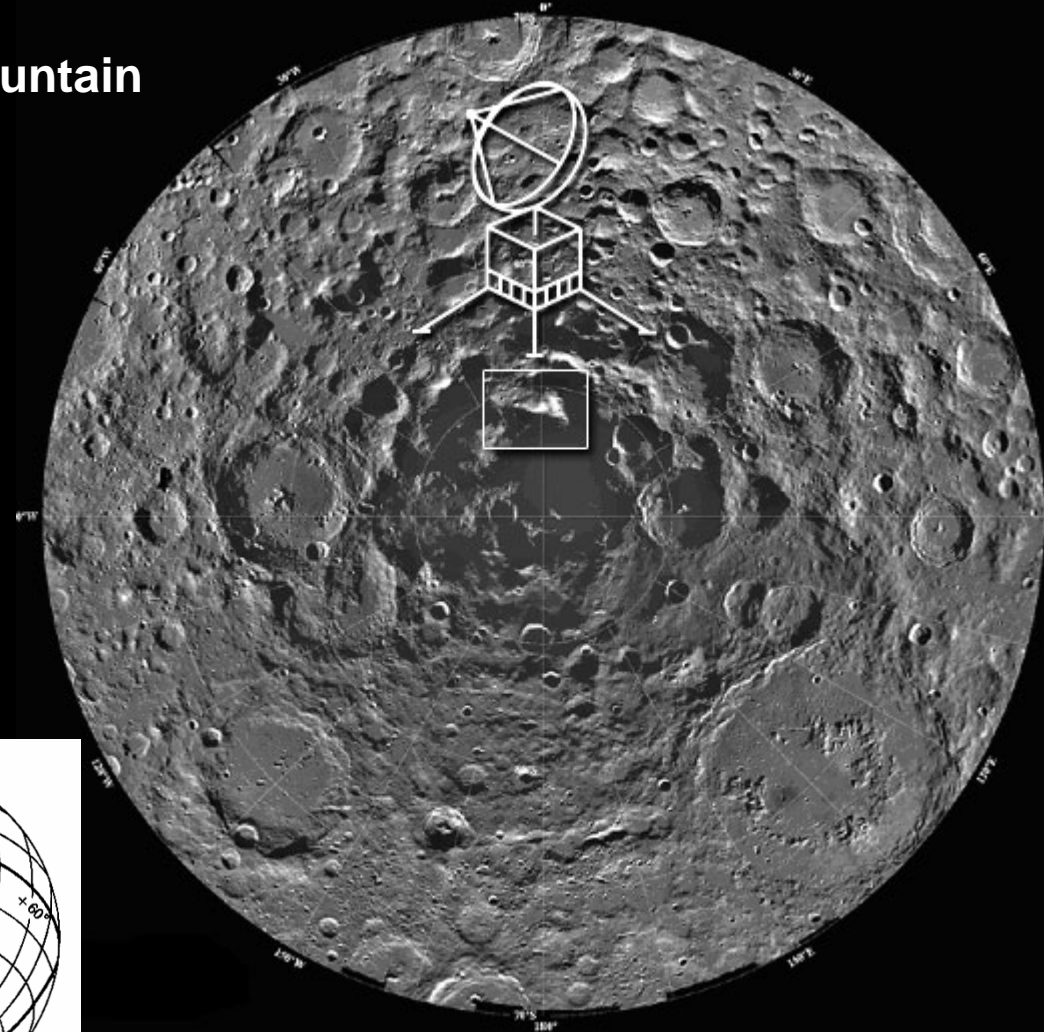
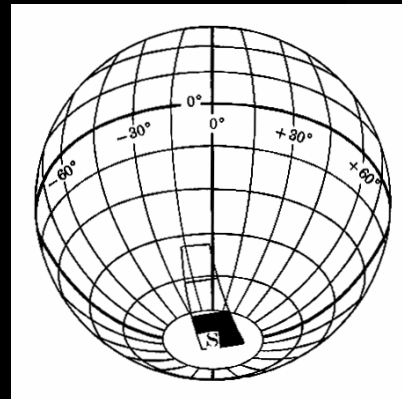
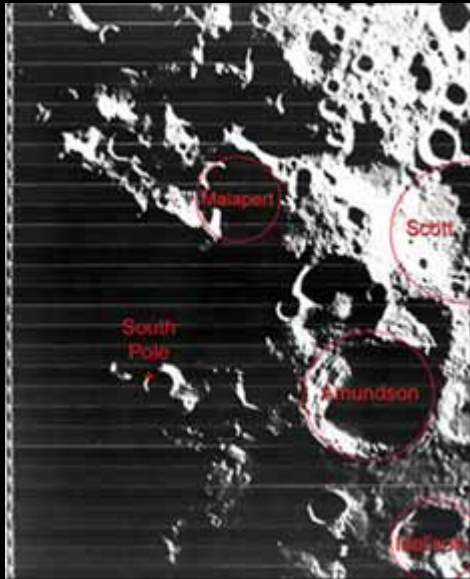
Credit: Canada France Hawaii Telescope Corporation

# Inter-Global / Cislunar System



# International Lunar Observatory (ILO)

- ILO to be Located at 'Malapert' Mountain
- 'Electrification' of the Moon



# Shackleton Crater Location

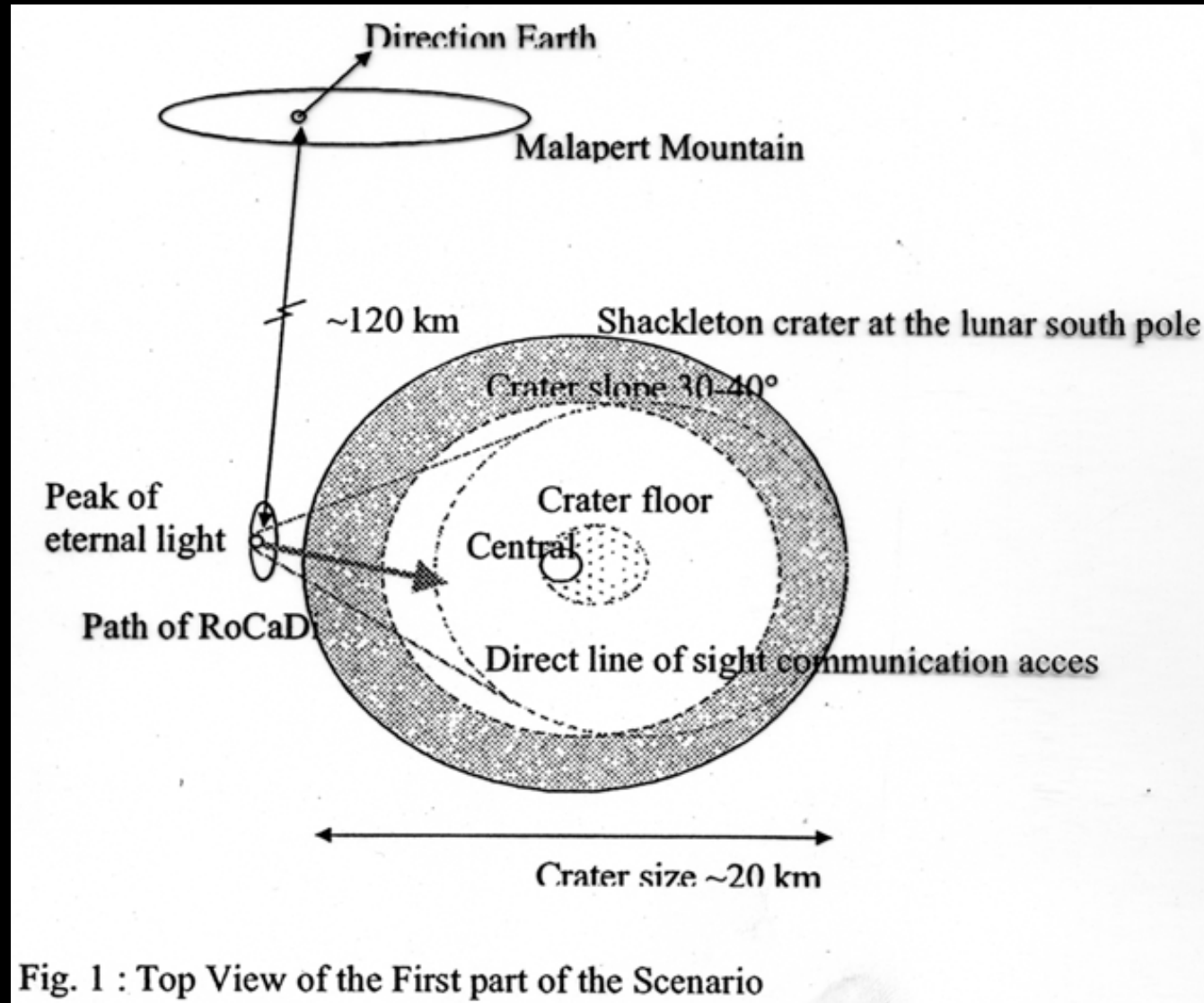


Fig. 1 : Top View of the First part of the Scenario

# **International Lunar Observatory (ILO)**

**The ILO is a Multi-Functional ...**

- **Astrophysical Observatory**
- **Power Station**
- **Communications Center**
- **Site Characterizer**
- **Property Rights Agent**
- **Virtual Dynamic Nexus Website**
- **Hawai`i Astronomy Booster**
- **Toehold for Human Lunar Buildout**

# Why Astronomy from the Moon?

- **Mechanical stability / stable platform – can point and track precisely**
- **High vacuum, no atmospheric absorption or scattering**
- **Farside free of Radio Frequency Interference**
- **Constant, uninhibited observation (except for Sun and Earth)**
- **Extremely long life – no expendable gases, gyro wear, etc.**
- **Real time control possible - light travel <3 second round trip**
- **A lunar observatory is expandable (interferometry)**
- **Low mission cost now possible thru private space enterprise**
- **Infinite single point observation at Poles, depth unmatched**
- **And much more**

**Many advantages of astronomy from the Moon are well known. There are no fundamental or engineering problems in sending a robotic mission to the Moon. It has been done many times before using much older technology**

# **Primary and Secondary ILO Mission Objectives:**

- **Initial landing site observation, local surveillance**
- **Search for Earth-like planets**
- **Analyze interstellar molecules to determine origin of Solar System**
- **Search for dangerous NEOs**
- **Image Galactic Center**
- **Earth observations: geocorona, etc.**
- **Solar observations, solar storm warnings**
- **Search for Extra-Terrestrial Intelligence (SETI)**
- **Observe signs of life on Mars, Europa, Titan, etc.**
- **More**

# Lunar Commercial Communications:

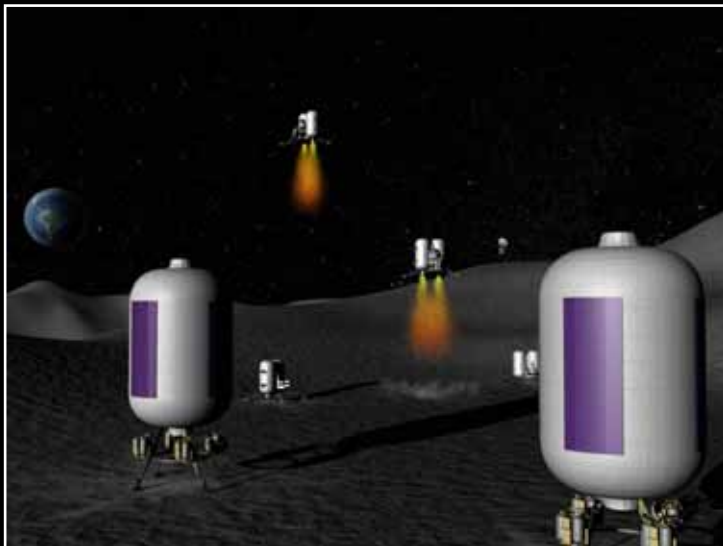
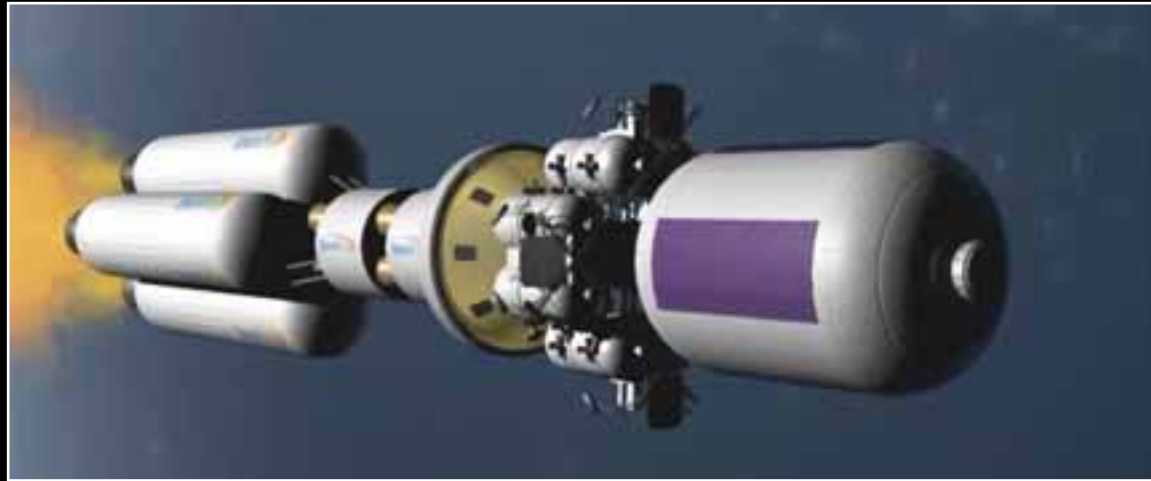
*The International Lunar Observatory requires communications capacity to transmit astrophysical data to satisfy its primary mission. Bandwidth not utilized for astrophysical data transmission can be made available on a commercial basis.*

## Commercial Usage of Additional Bandwidth

Pre-sold Bandwidth	Bandwidth Available Upon Emplacement (May be pre-sold when launch date set)		Future Need
<p><b><u>Lunar Enterprise Daily</u></b> This lunar news daily will be transmitted from the Moon. Advertisers will pay a premium rate for transmission of their ads from the lunar surface.</p>	<p><b><u>Internet Search Engine Giants</u></b> search engine giants, such as Google and Yahoo, as well as other internet businesses, will be able to purchase bandwidth and use it to provide special services from the lunar surface, which might include local imagery. Interactive games may be developed which actually take place on the Moon.</p>	<p><b><u>Specialty Advertising Opportunities</u></b> Large corporations will be able to use a Moon email system to capture the attention and interest of consumers for products which may relate to any of the numerous associations modern culture attributes to Luna.</p>	<p><b><u>In Situ Communications and Monitoring Capabilities for Robotic Project Operators</u></b> As the wave of robotic and mining/excavation missions arrive on the lunar surface, they will do so with the knowledge that communications and surface monitoring capabilities in the region of Malapert Mountain and Shackleton Crater will be in place and available for purchase.</p>



# Human Service Mission



# International Lunar Observatory Association

- ILOA to be Based in Hawai`i
- Center of Pacific Hemisphere
- Global Support Centers
- Maintain Hawai`i Preeminence in Astrophysics for Next 100 Years



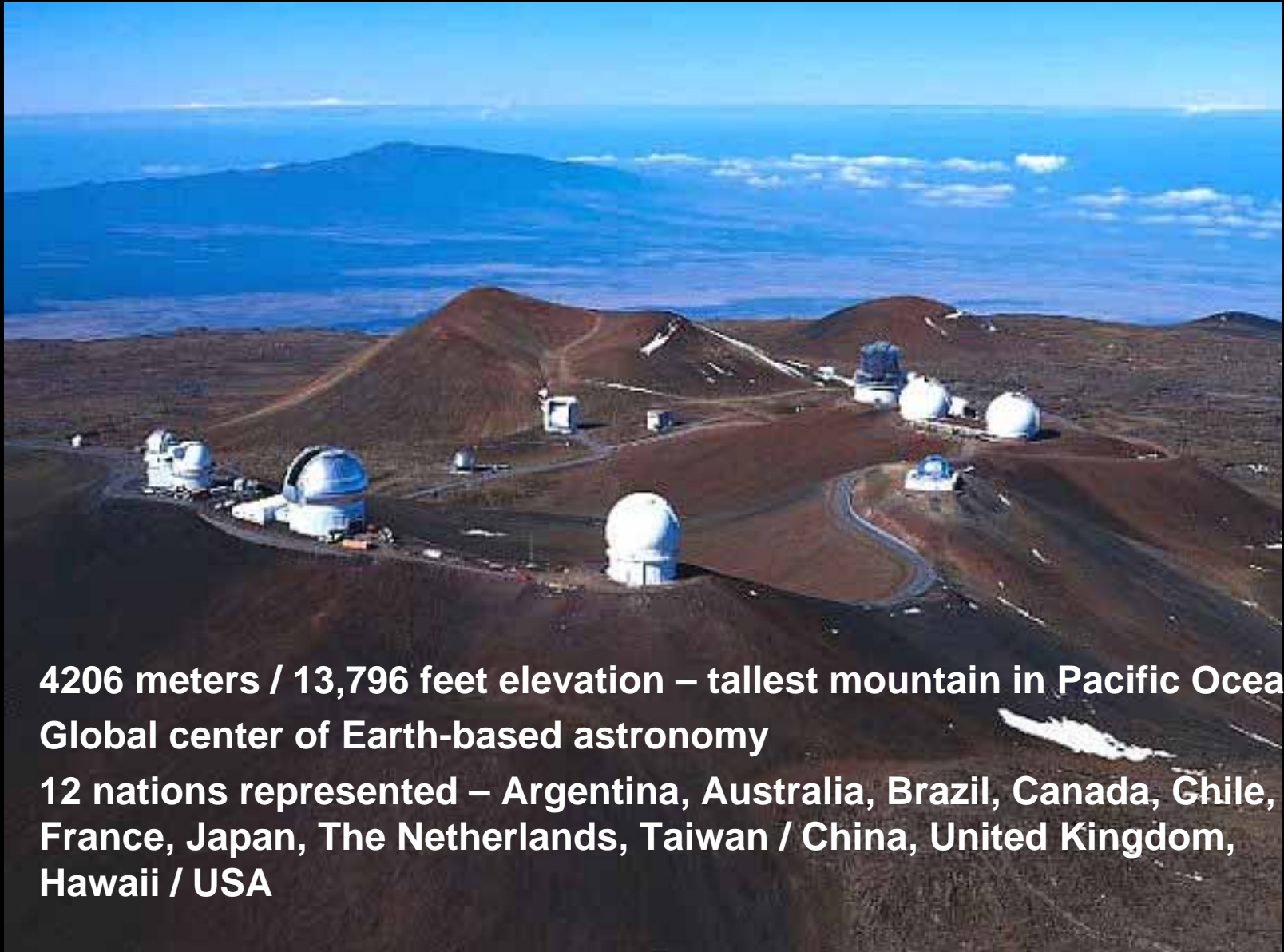
# **Why Is Hawai`i Important to Space Exploration?**

## **– Geographic Advantages:**

- **Center of Pacific Hemisphere**
- **Southern-most site in USA / equatorial proximity**
- **Mid-Pacific islands bi-directional launch capacity (equatorial or polar)**
- **Mauna Kea – highest point in Pacific**

**And Aloha!**

# Mauna Kea Summit Observatories

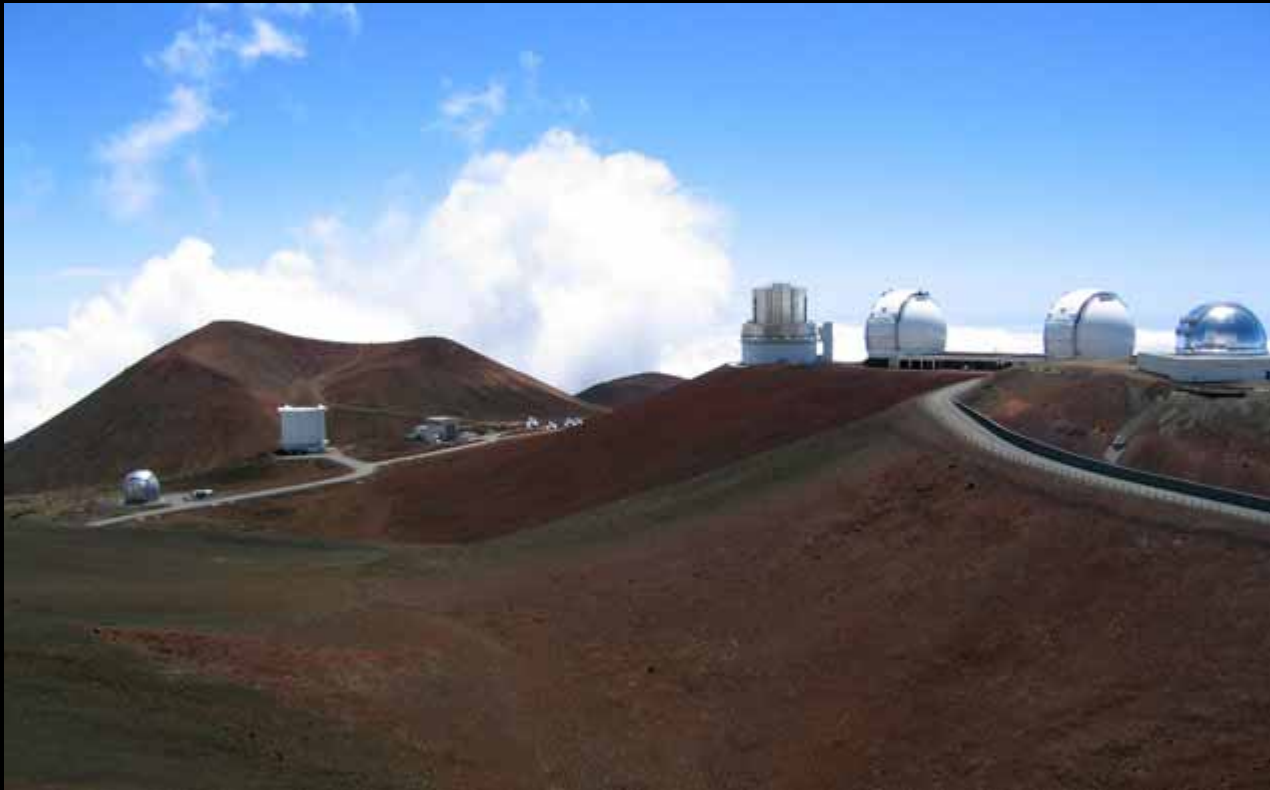


- 4206 meters / 13,796 feet elevation – tallest mountain in Pacific Ocean
- Global center of Earth-based astronomy
- 12 nations represented – Argentina, Australia, Brazil, Canada, Chile, France, Japan, The Netherlands, Taiwan / China, United Kingdom, Hawaii / USA

# Smithsonian Submillimeter Array



# Submillimeter Valley, Subaru, Keck 1 & 2, NASA Infrared Telescopes



# Gemini Ridge



# International Lunar Observatory Association

## ILOA / ILO Assets ...

- **5 SpaceDev Studies 2003-2007 (ILO / Human Service Mission)**
- **Master / Business Plan**
- **MoUs with CFHT, NAOC / International Partnerships**
- **Cisco Systems Router, AMIE Camera**
- **ILOA Newsletter / Website / Office**
- **Lunar Commercial Communications Workshops**
- **Non-Profit 501(c)3 Status**
- **Acting Directors with Operating Reserves**

# ILOA

## ILO / Human Service Mission

