



Air Force Maui Optical & Supercomputing Site

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“AMOS” Background



1960

ARPA Midcourse Observation Station

2001

Air Force Maui Optical & Supercomputing Site

- Site construction started in 1963 under the technical review of the Advanced Research Projects Agency (ARPA)
- Steadily upgraded with advanced capabilities
- 1994: High Performance Computer completed
- 1999: AEOS completed
 - Largest DoD telescope with 3.67m primary
 - Highest resolution adaptive optics
- Largest electro-optical tracking facility in the Pacific
- Combines large aperture tracking optics with visible and infrared





AMOS Resources

State-of-the-Art Systems, Facilities & People

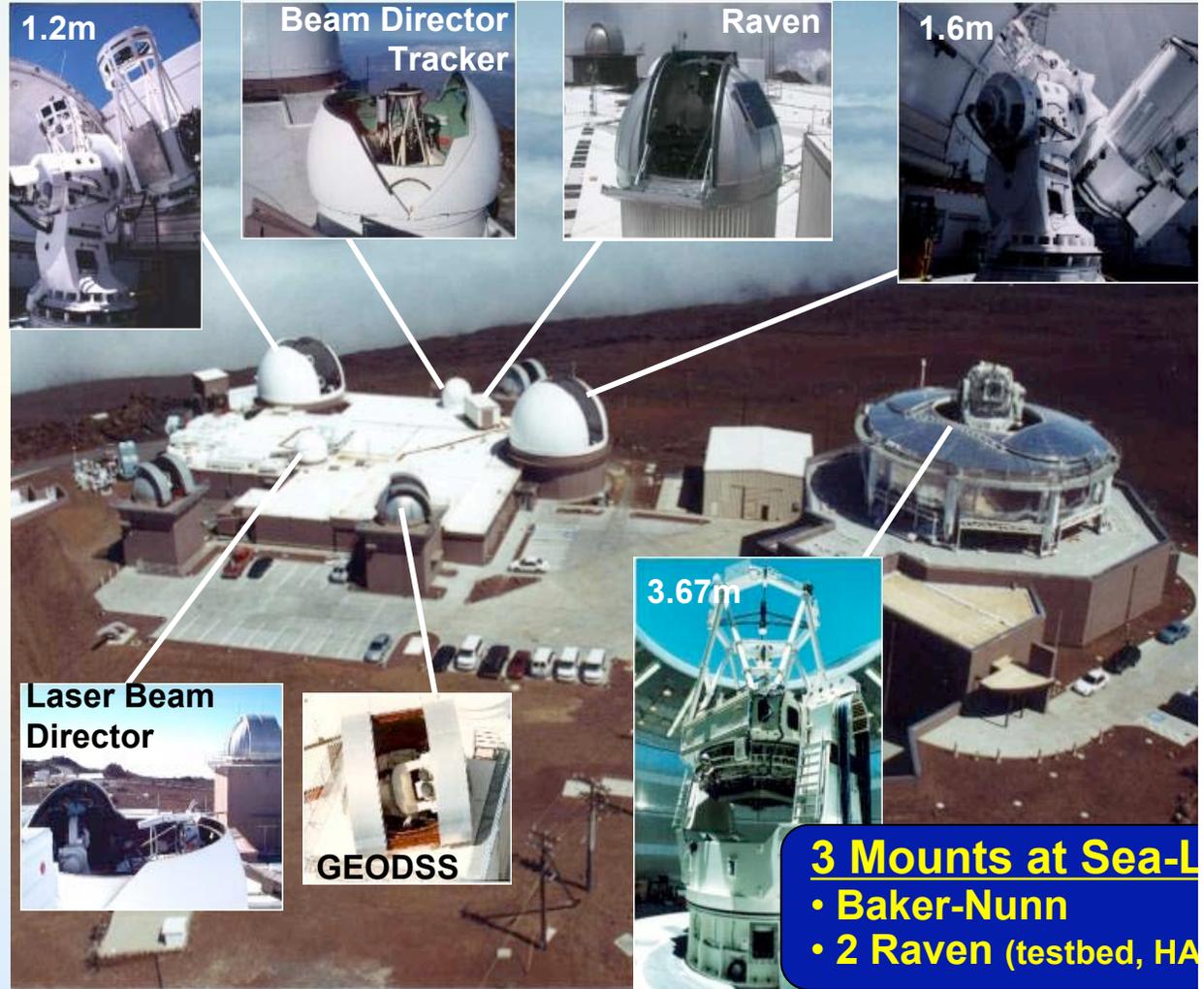


Maui Space Surveillance System (MSSS)

Maui High Performance Computing Center (MHPCC)



DoD Computational Capability (7.6 TFLOPS)



- 3 Mounts at Sea-L**
- Baker-Nunn
 - 2 Raven (testbed, HA)

24/7 Optical Capabilities



Science & Research Capabilities



Satellite Detection & Identification

- Orbital Metrics
- Non-imaging (radiometric/thermometric) Space Object Identification (SOI)
- Orbital Debris
- Mission Geometry Analysis

Atmospheric Compensation/Resolved Imaging

- Adaptive Optics
- Post Processing Algorithms

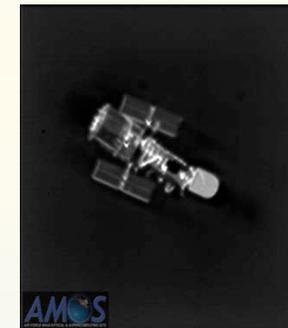
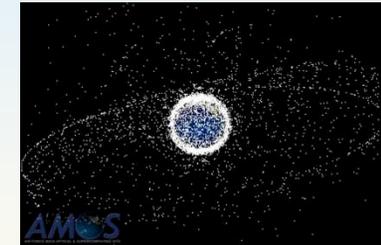
Astrodynamics and Astronomy

Missile Operations

Sensor Development (Visible & IR)

Laser Propagation

- LIDAR/LADAR
- Beam Relay
- Active Track

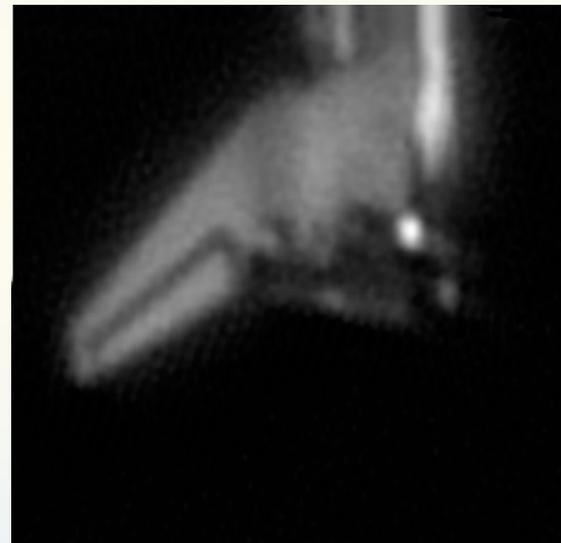




JOHN GLENN STS-95 (1998) DISCOVERY



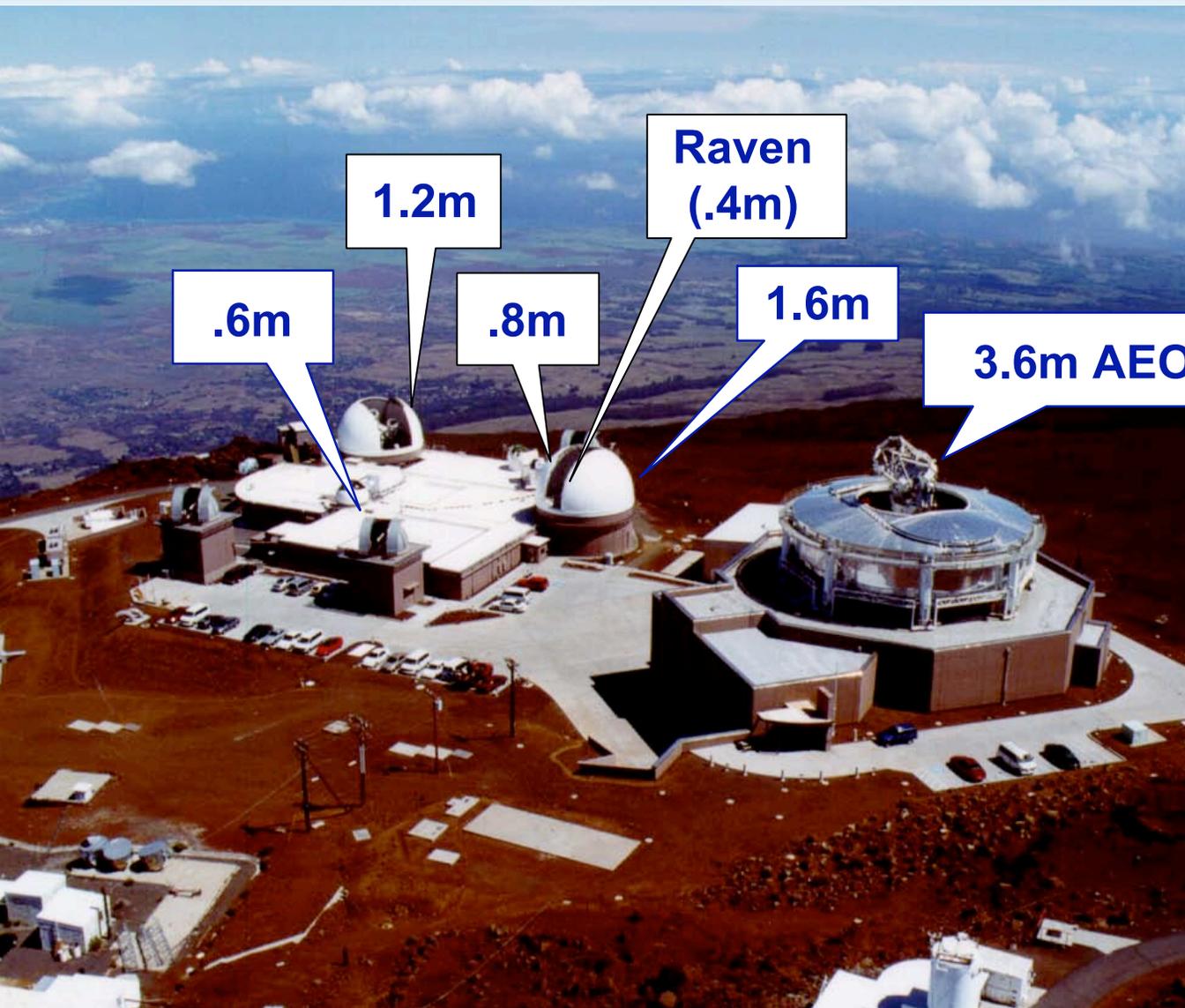
**Area where
door panel
fell off**



Missing drag chute panel
imaged using 1.6M (with
image processing)



AMOS Telescopes



MSSS:

Daylight Tracking and Image
GEMINI on 1.6m

Full dark Tracking and Image
LWIR on 3.6m

Terminator Tracking
All telescopes

Autonomous Deep Space Tr
Raven



AEOS 3.6m Telescope Shown Uncovered in Daylight

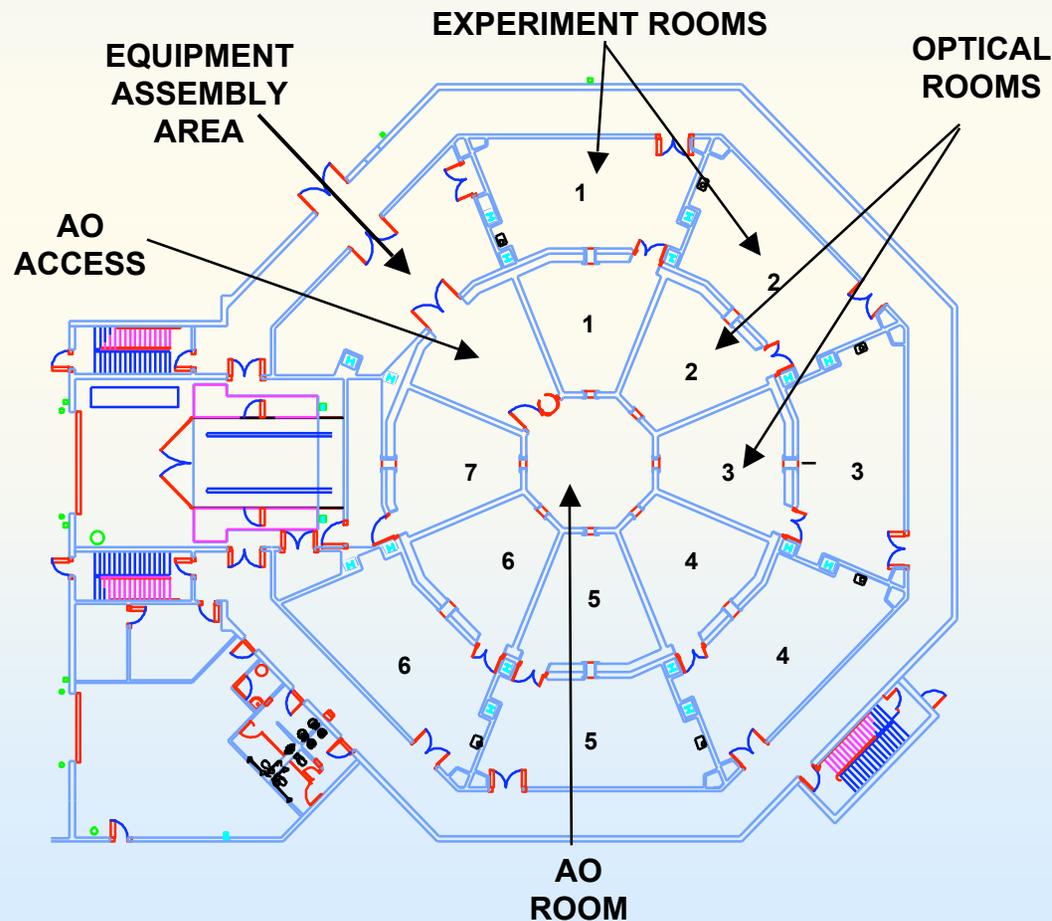




AEOS FACILITY ACCOMMODATES MULTIPLE USERS



- 40,000 ft² 5-level facility with retractable dome
- AO room with 7 optics/experiment suites ('coude rooms')





Summary

MSSS has 7 mounts that provide full spectrum (0.4 –14 um) electro-optic coverage over a 2000+ kilometer radius from Maui on a 24/7 basis (weather dependent)

Capabilities include:

- Acquisition, tracking, and pointing (either cued or autonomous)
- Photometry/Radiometry/Thermometry
- Resolved imagery in day/night/terminator conditions
- Spectroscopy
- Metric data (positional/orbital)
- Active laser projection
- Modeling/simulation and mission planning
- Data collection and dissemination

AMOS is a world class asset providing flexible, responsive, value added products to multiple customers

AMOS

AIR FORCE MAUI OPTICAL & SUPERCOMPUTING SITE

