

Astronomy, Planetary  
Sciences, and  
Space Sciences  
Research  
Opportunities to  
Advance Arizona's  
Economic Growth

A Report by  
The Arizona Arts, Sciences  
and Technology Academy  
January 2008



# Astronomy and Space and Planetary Sciences is a Core Strength - Battelle Report

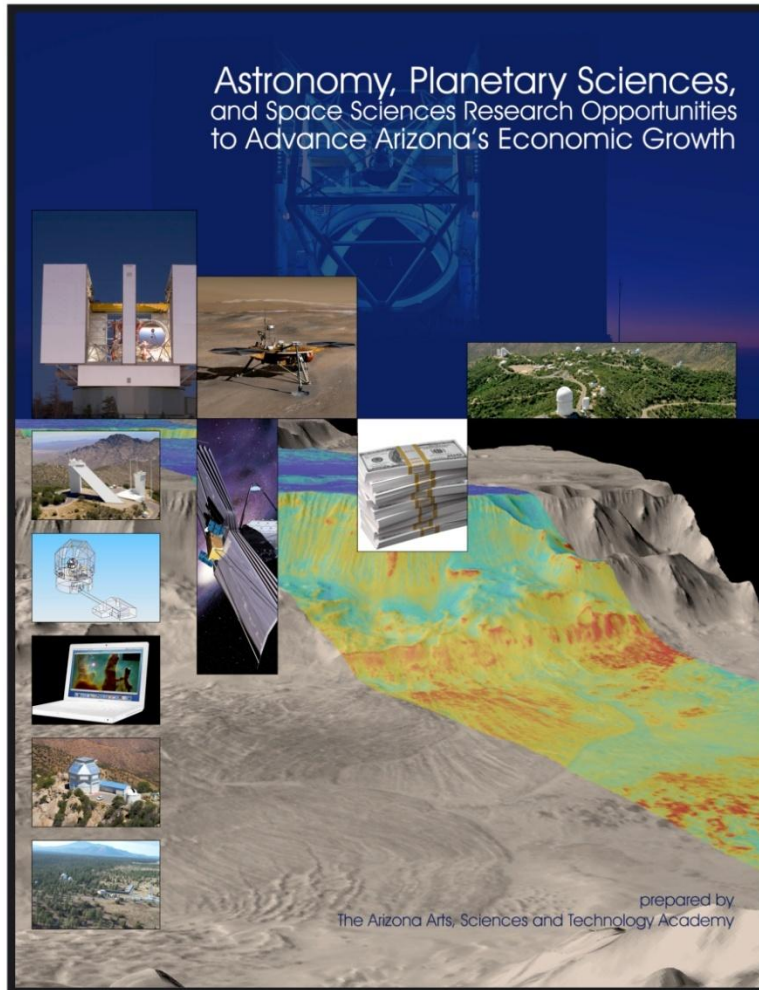
- Largest Concentration of Telescopes in the World
- Legacy of More than 50 Missions

APSS dual-use technologies embedded in the state's universities, federal labs and private institutions: biosensing, communications, computing, imaging, instrumentation, materials, microelectronics, navigation, optics, power, propulsion, sensors, software and systems integration



# Study

Astronomy, Planetary Sciences,  
and Space Sciences Research Opportunities  
to Advance Arizona's Economic Growth



prepared by  
The Arizona Arts, Sciences and Technology Academy



# Key Findings

- Total Capital Investment in APSS - \$1.199 billion (\$635.7 Million in the Queue)
- Total Annual Economic Impact APSS Research - \$252.8 million
- Total APSS Research Employment Impact - Greater Than 3,300 Jobs
- Total APSS Direct Research Employment - 1,830
- Space Science Dollars Go To Colorado and California Corporations



# Perspective



\$170 - 300 million

Occurs once every 12 years

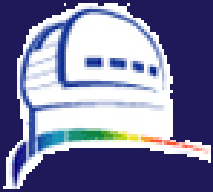


\$1 billion

Every 4 years



# An Overlooked Opportunity



## National Optical Astronomy Observatory

Kitt Peak National Observatory • Cerro Tololo Inter-American Observatory • NOAO Gemini Science Center

- California - 7 FFRDCs - \$2.7 billion
- Colorado - 2 FFRDCs - \$224 million
- New Mexico - 2 FFRDCs - \$1.9 billion
- Arizona - 1 FFRDC - \$57.2 million

FY 2003 Data: Source NSF

- NOAO Budget FY2009 - ~\$42 million
  - Source NSF



# An Overlooked Opportunity

## National Solar Observatory



SOLIS



McMath-Pierce Telescope

### **Only PV testing facility in the nation.**

- ASU Polytechnic is home to the nation's only photovoltaics testing laboratory.

### **Pioneer in higher education.**

- ASU launched the world's first School for Sustainability, and UA's photonics program is among best in the world.

GPEC – “Arizona’s Opportunity: Quality Jobs Through Solar



# Recommendations

- Develop an APSS Roadmap
- Advocate for Stable and Growing Federal APSS Research Funding
- Leverage University Technology
- Expand Mission for NOAO/NSO
- New Facility for NOAO/NSO
- Dark Skies

