

ISS Research Accomplishments

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NASA Chief Scientist

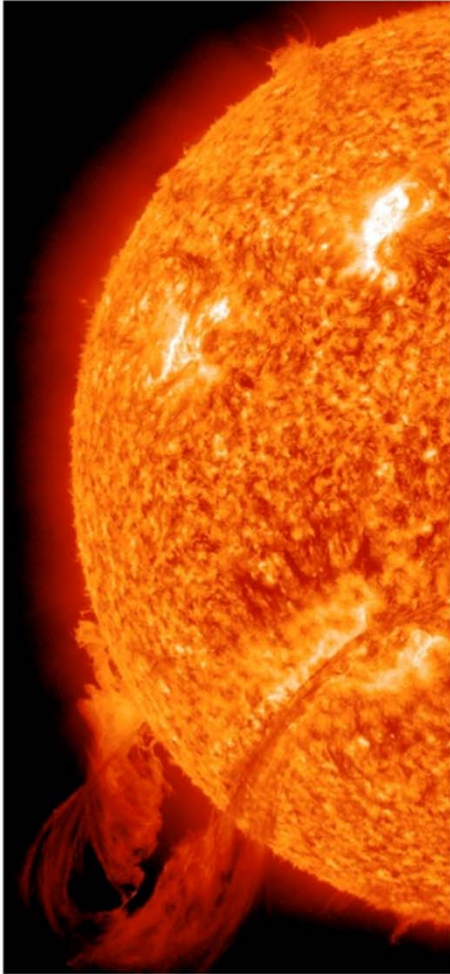
ISS Symposium 2012
Berlin, Germany
May 2-4, 2012

Science to **INSPIRE**

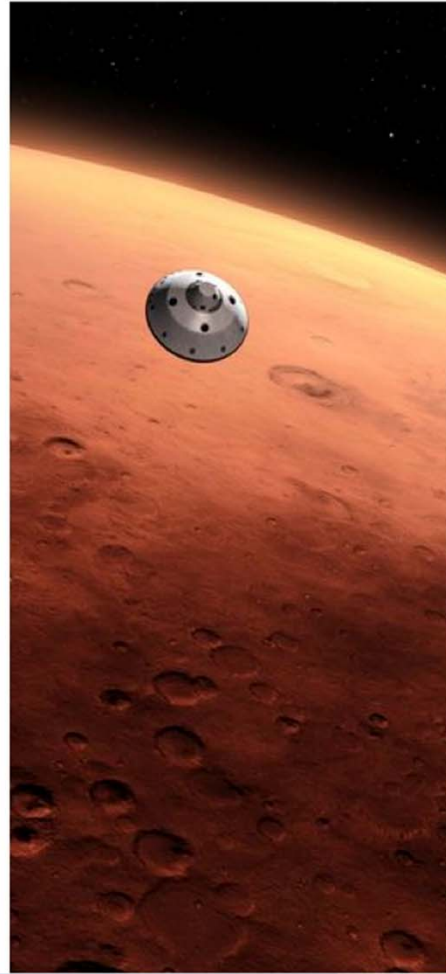


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Science to
SERVE



Science for
OUR FUTURE



ISS Research –Critical to mitigating human exploration risks

Biomedical Capabilities Development



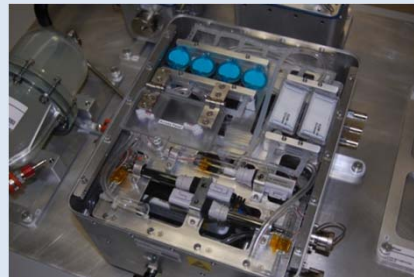
Lightweight Trauma Module



Portable Medical Imaging



Integrated health care system



IV Fluid Generation



CSA Cardiovascular Function Experiment



ESA Muscle Physiology Facility



JAXA Bone Loss Countermeasure Experiment



Russian Fluid Shift Countermeasure Experiment



ISS Research – *Critical to mitigating human exploration risks*

On-Orbit Research Facilities



Human Research Rack-1



Human Research Rack-2



Exercise Facilities

Biomedical Research



Nutritional Requirements



Physiological Changes
and Exercise
Countermeasures



Immunological Changes

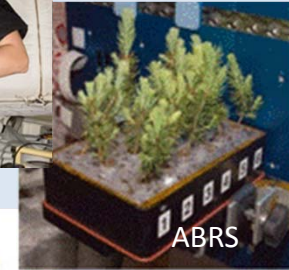
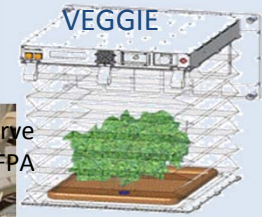


Crew Sleep and
Performance Research

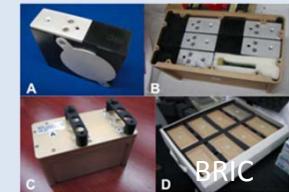
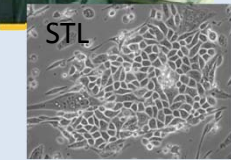
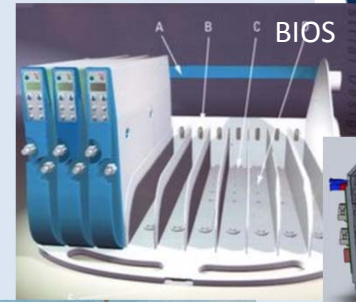


Space Radiation Research

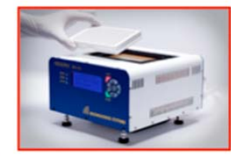
ISS Research – Space Biology



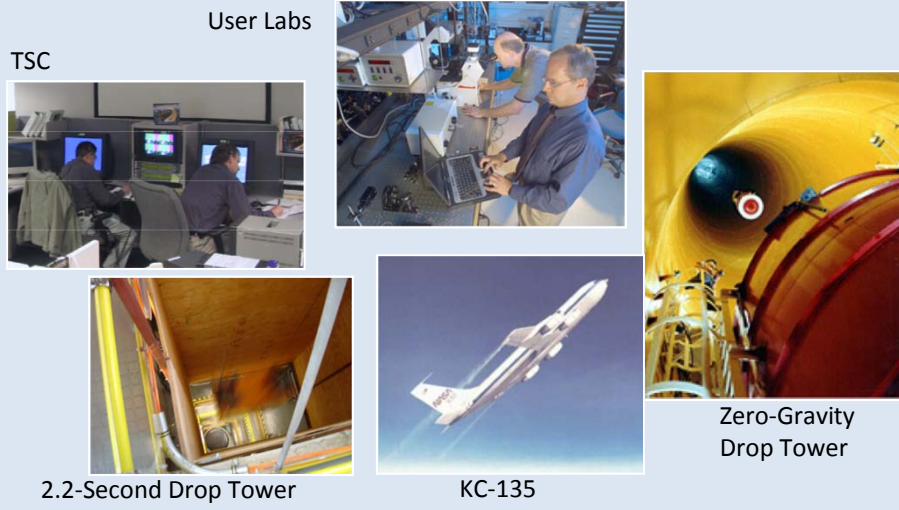
On-Orbit Research Capabilities & Science



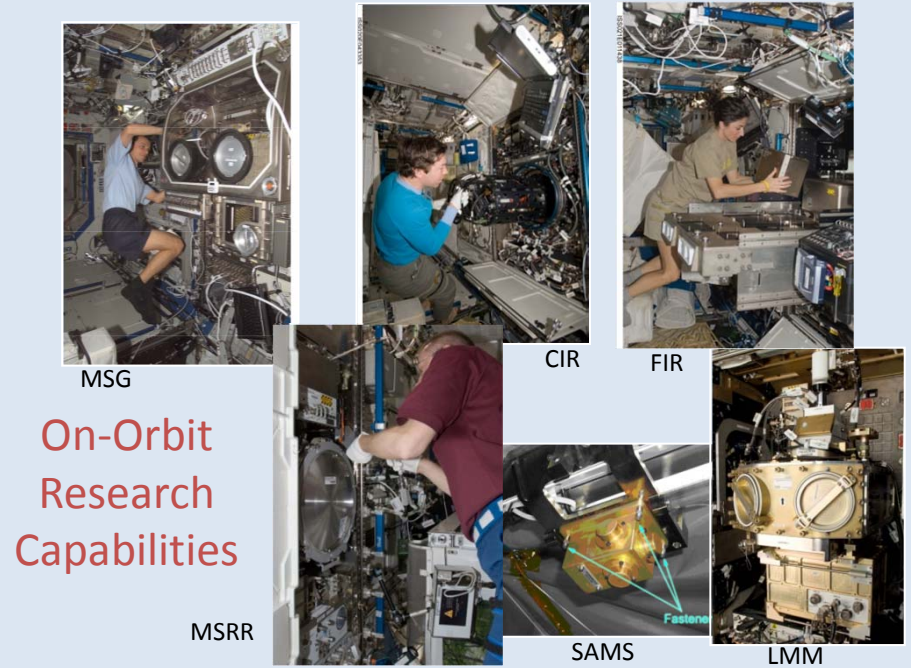
Operations



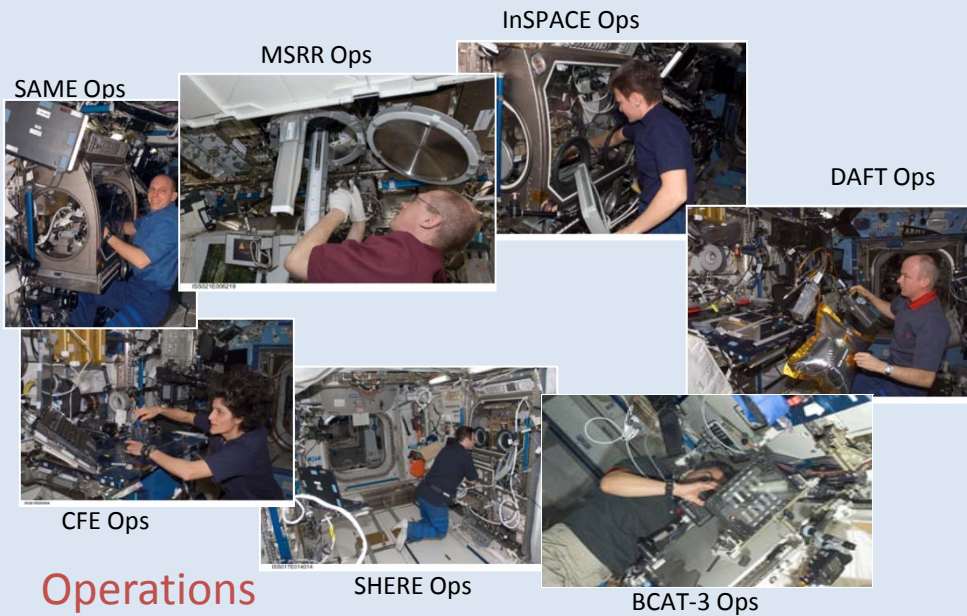
ISS Research – Physical Sciences



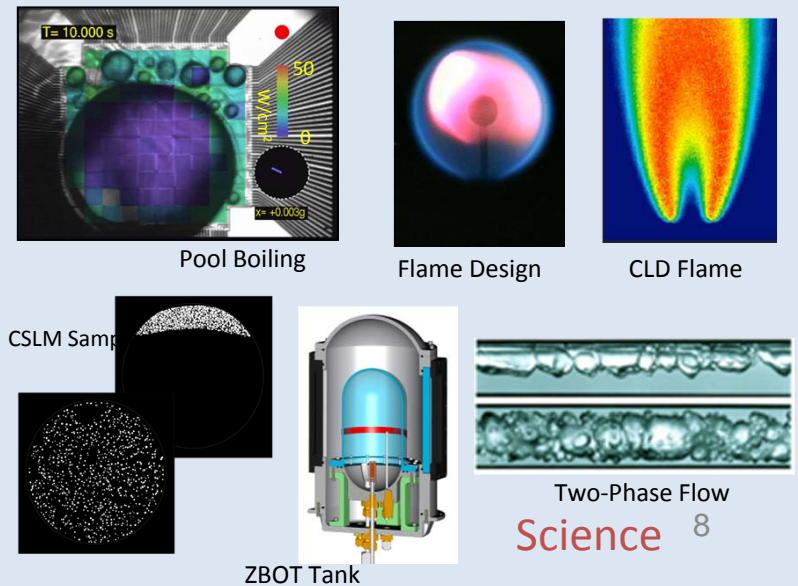
Ground-Based Research Facilities



On-Orbit Research Capabilities

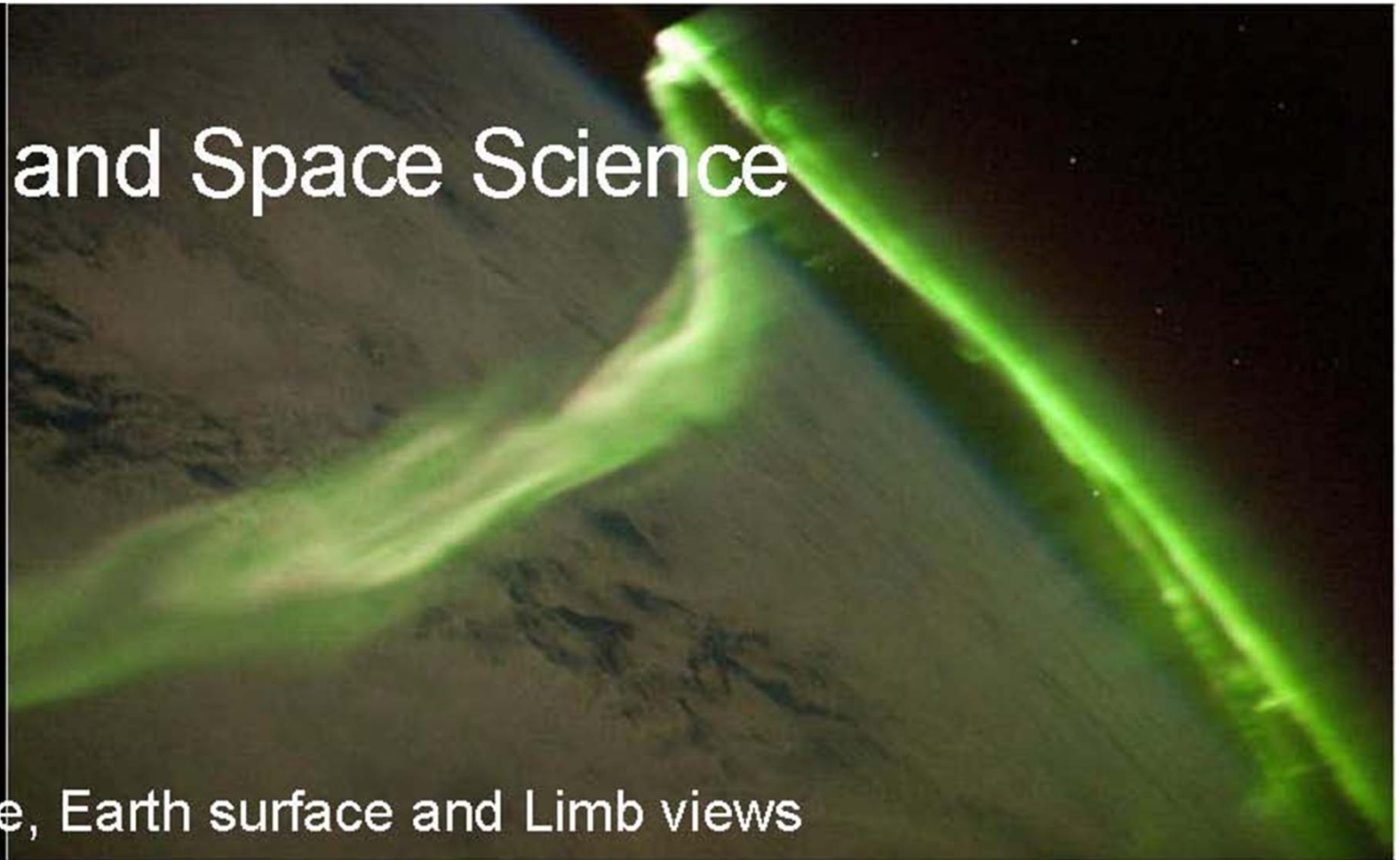


Operations



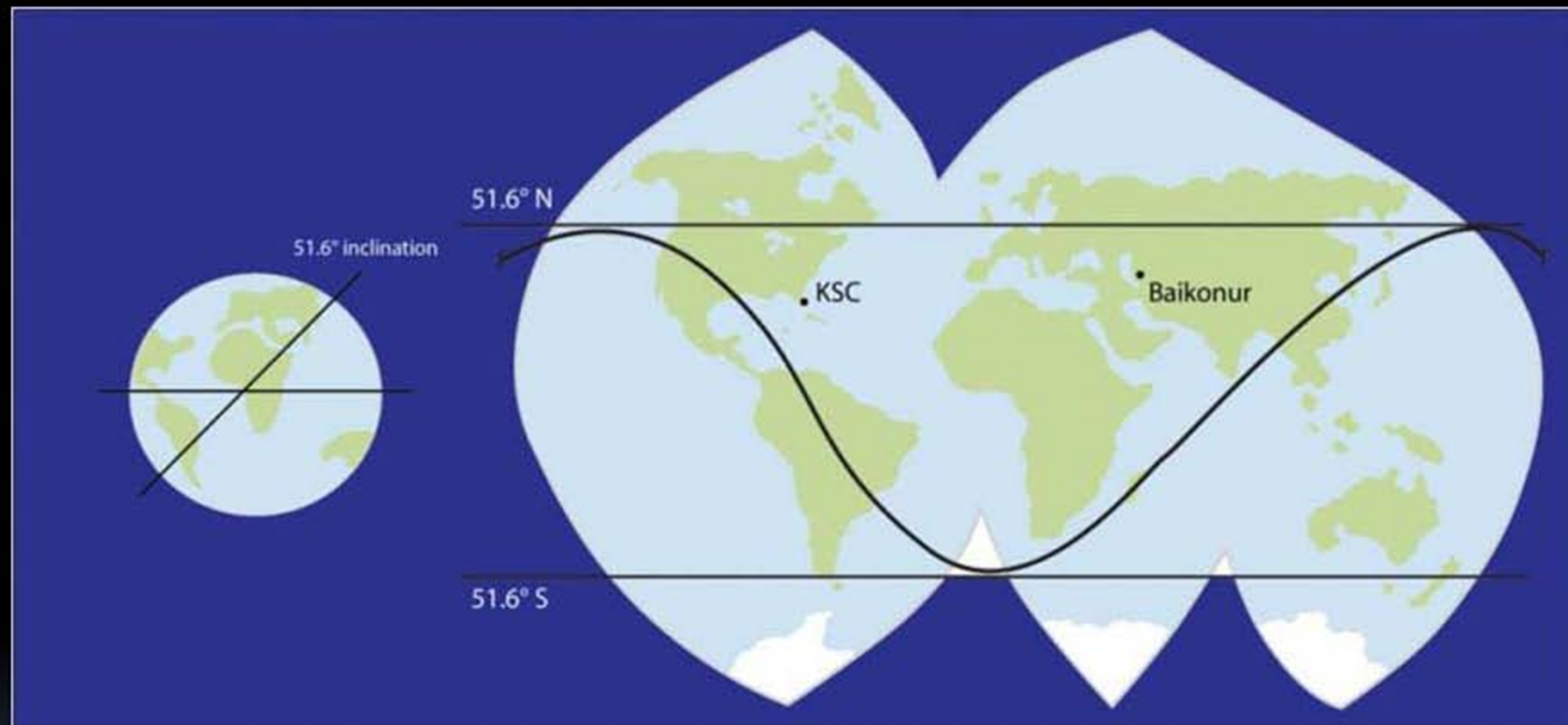
Science 8

Earth and Space Science



- Space, Earth surface and Limb views
- External and Internal Payload sites
- Observation of transient atmospheric phenomena
- Planetary science sensor test beds

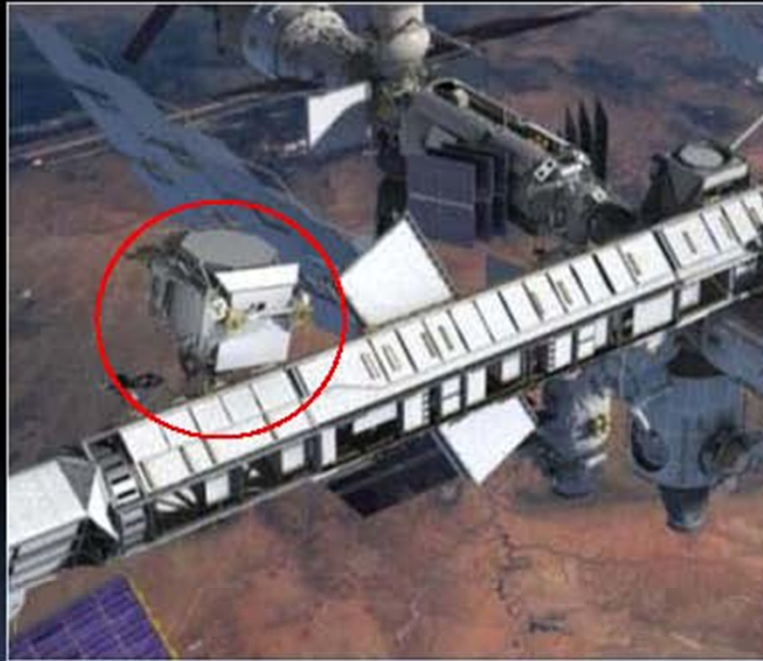
ISS as a Platform for Earth Science



All geographic locations between 51.6 North and South latitude
can be observed NADIR pointing
Provides coverage of 85% of the Earth's surface and 95% of the
world's populated landmass every 1-3 days

Alpha Magnetic Spectrometer (AMS)

*Cosmic Ray detector
Truss mounted payload*

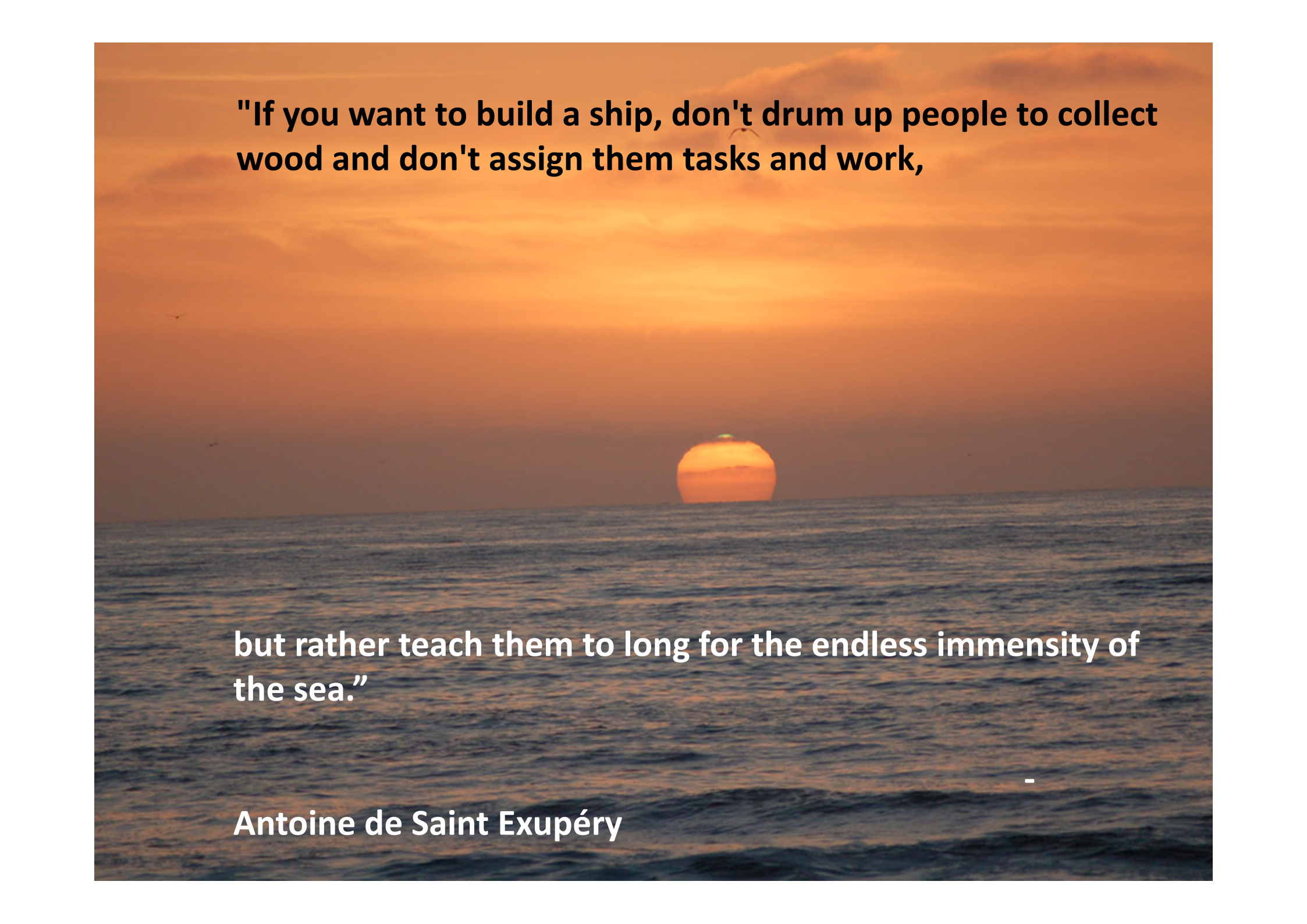




A Universe of Opportunity

- To look outward
- To look inward
- To look homeward





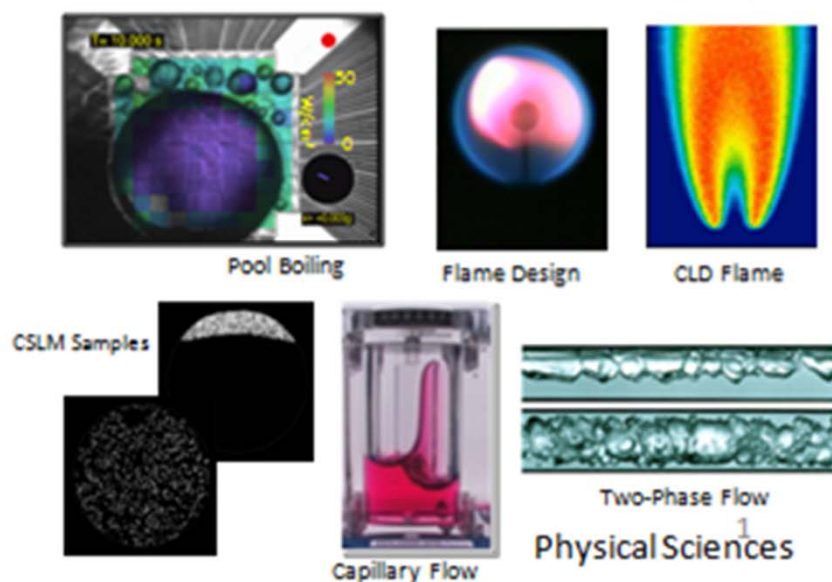
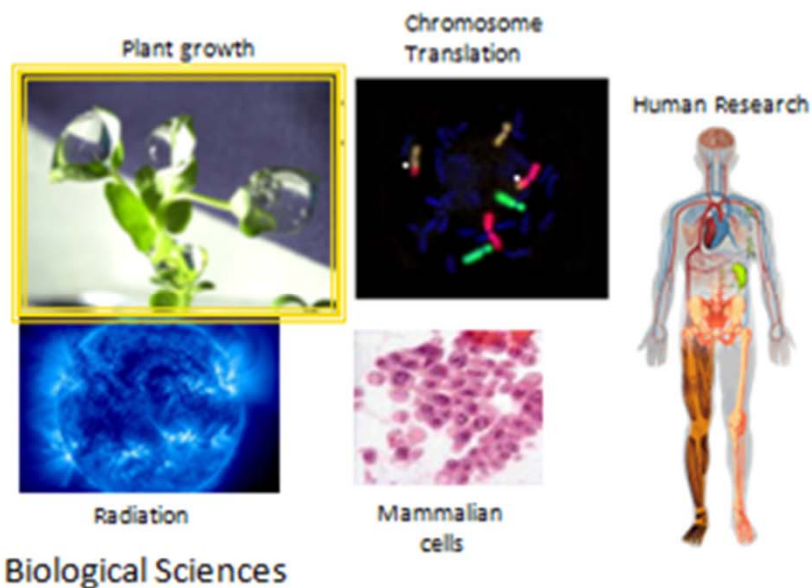
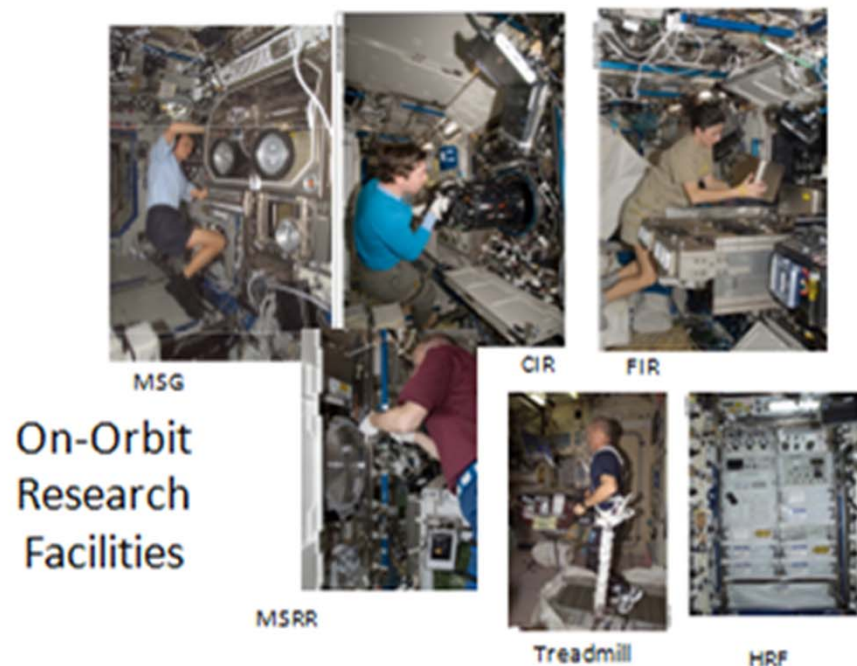
"If you want to build a ship, don't drum up people to collect wood and don't assign them tasks and work,

but rather teach them to long for the endless immensity of the sea."

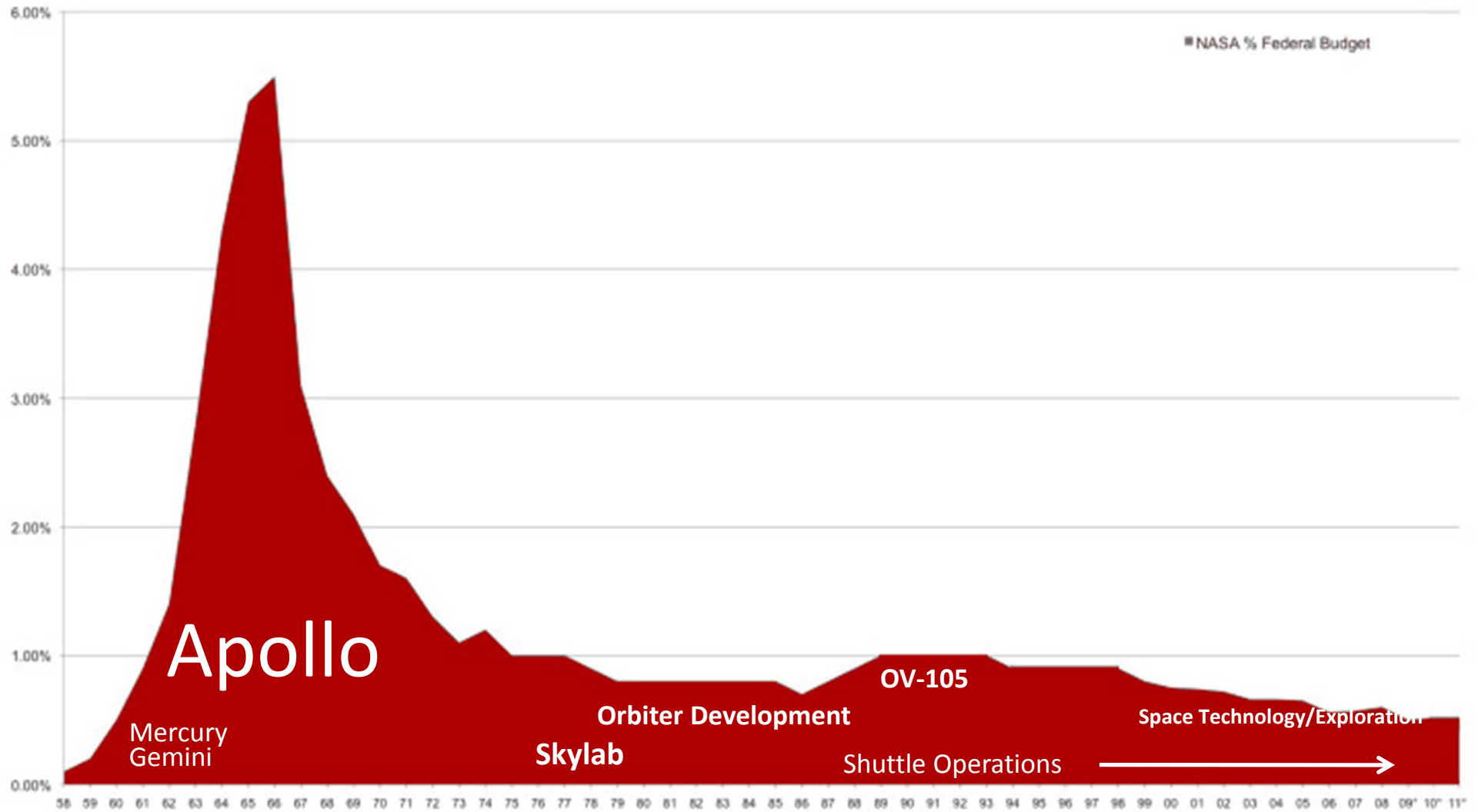
Antoine de Saint Exupéry

BACK UP

Biological and Physical Sciences Research



NASA's Federal Budget History



* Projected budget, includes stimulus

** Proposed budget