

European Space Agency ESA




ESA's Space Portal in French Guiana

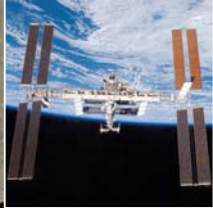


Context

- Introduction
- Budget
- Directorates
- Space science
- Projects
- Future of ESA
- Questions



Foton-M3



ISS

Introduction

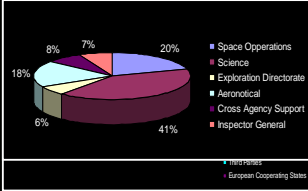
- ESA started in the 1960's. Official in 1975 – NASA Act of 1958
- How many countries make up ESA?



17 Countries

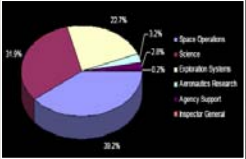
Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. Canada, Hungary, Poland, Romania and the Czech Republic also participate in some projects under cooperation agreements.

Budget



Category	Percentage
Space Operations	20%
Science	41%
Exploration Directorate	18%
Aeronautical	6%
Cross Agency Support	7%
Inspector General	8%

ESA's Budget = 4.7 Billion USD



Category	Percentage
Space Operations	22%
Science	38%
Exploration Directorate	21%
Aeronautical Research	3%
Agency Support	5%
Inspector General	2%

NASA's Budget = 17.3 Billion USD


- All Member States contribute to General Budget and Science on a scale based on their Gross Domestic Product (GDP).

Directorates of ESA

- Earth Observation Programmes
- Technical and Quality Management
- Launcher Programmes
- Human Spaceflight, Microgravity and Exploration Programmes
- Resources Management
- External Relations
- Science Programmes
- EU and Industrial Programmes
- Operations and Infrastructure

Space Science

- The Core of ESA
- Questions Space Science Tries to Answer
 - How did our Earth and our Solar System evolve?
 - Where are we in the Universe?
 - Where are we going?
 - Where did life come from, and are we alone?

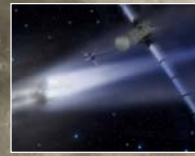


Space Science

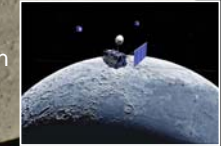
- “Cosmic vision”
 - “We will be developing spacecraft architectures that satisfy more than one mission, reducing interfaces, and identifying common functions across spacecraft payloads and service modules.”
 - Combining Missions

Current Projects

- ROSETTA
 - Comet Chaser
- INTEGRAL
 - Gamma Ray Observation
- COROT
 - Finding Habitable Exoplanets
- KAGUYA
 - Moon’s Origin and Evolution



ROSETTA



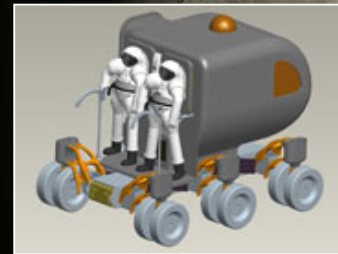
KAGUYA

Future Projects

- James Webb Space Telescope 2013
 - Hubble’s Successor
- Laser Interferometer Space Antenna 2009
 - Detect Gravitational Waves
- GAIA 2011
 - 3D mapping of our galaxy
- DARWIN 2013
 - Finding Earthlike Planets



NASA’s Future



Future of ESA

- Reusable Rockets
 - Is This Wise?
- Where is ESA heading?
 - Space Science in particular
- Future goals
 - Expanding ISS



Questions



GOCE in orbit