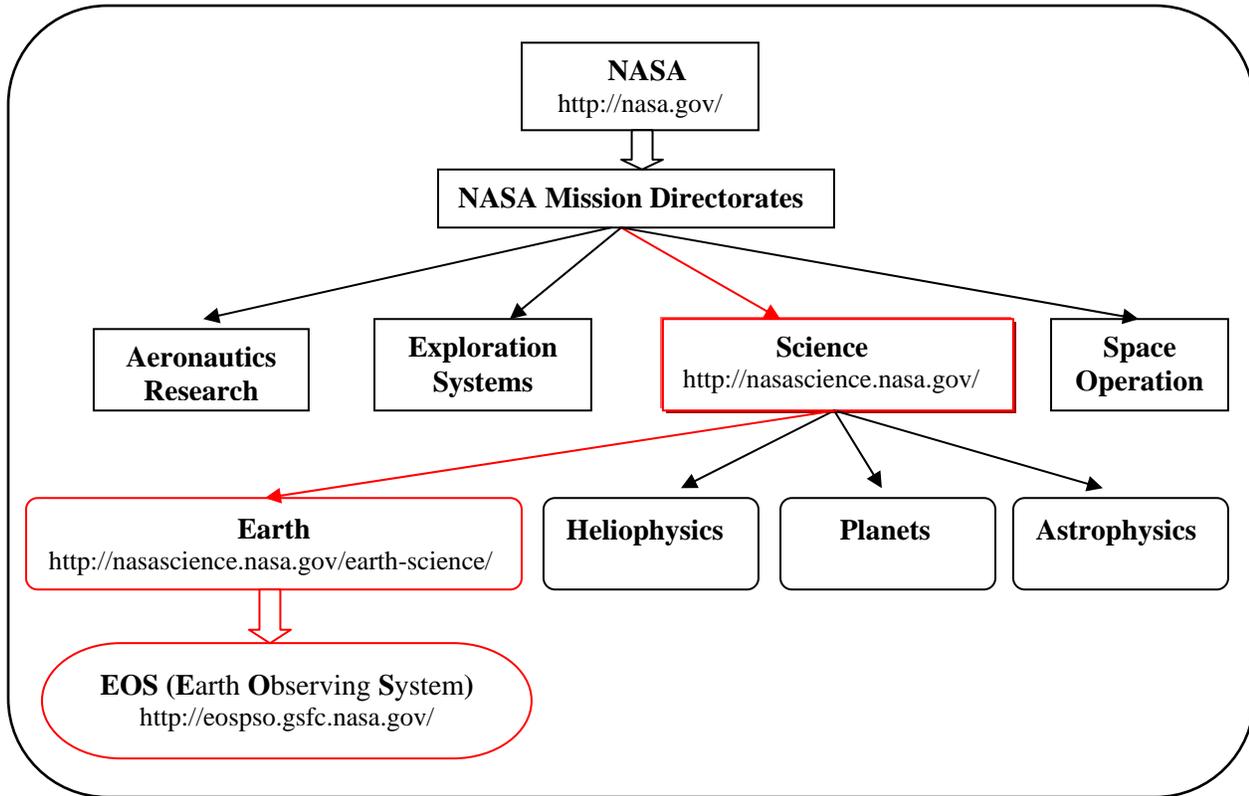
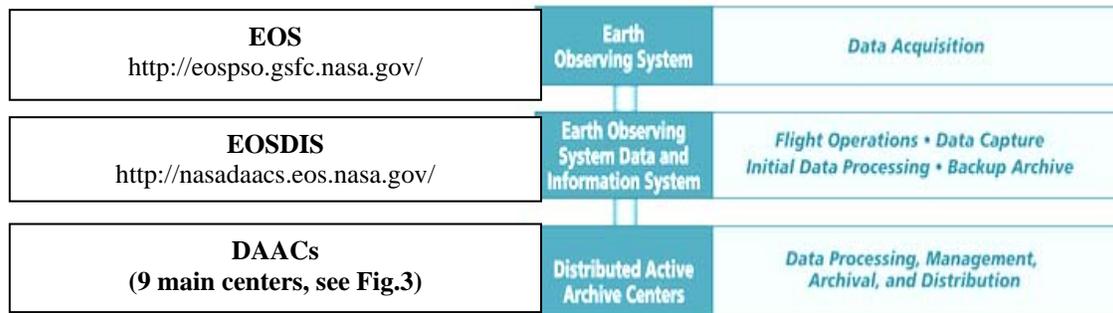


SUPPLEMENT MATERIALS

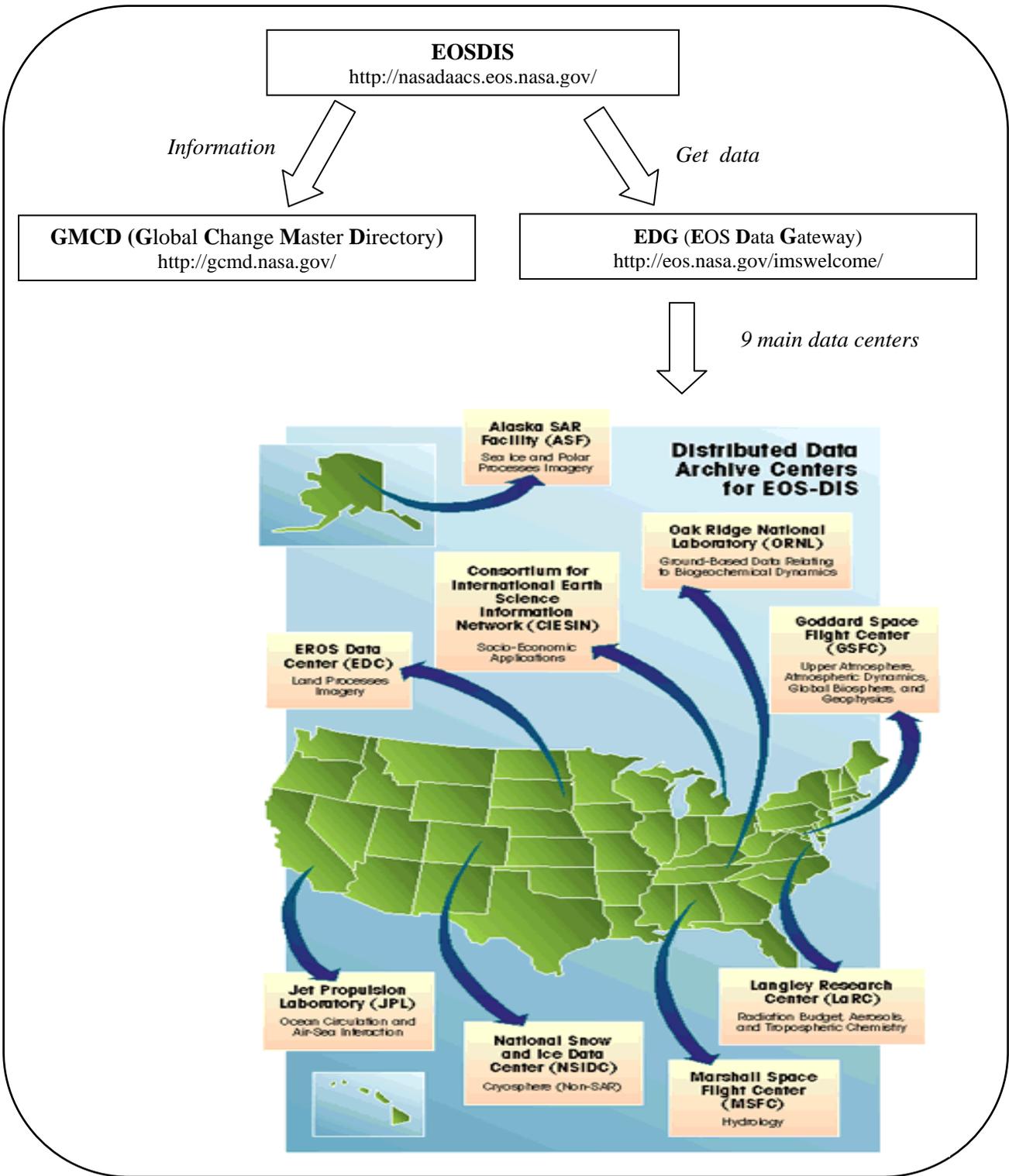
NASA Earth System Science:  
Structure and data centers



**Figure 1.** Flow diagram of NASA mission directorates. Red color highlights the components related to the Earth science.



**Figure 2.** Hierarchical relationship and responsibilities of EOS, EOSDIS, and DAACs.



**Figure 3.** Organization of EOS data products and data centers.

## **BRIEF OVERVIEW OF EOS DATA CENTERS:**

### **Global Change Master Directory (GCMD) <http://gcmd.nasa.gov/>**

The GCMD provides information to assist users in locating EOS and other Earth science data sets and services and to help determine whether the data or service meets the user's needs.

Descriptions include information such as location of the data or service, associated investigators and other contacts, spatial and temporal coverage of the data, resolution of the data, and links to the actual data or service.

The GCMD database can be searched for EOSDIS data sets by using free-text or an extensive set of keywords covering all areas of Earth science research including the atmosphere, biosphere, hydrosphere and oceans, snow and ice, geoscience, paleoclimatology, land surface, and human dimensions of global change. Data sets can also be searched by platform (or spacecraft), instrument, data center, geographic location, or project. For example, a user may conduct a search for all data sets from Terra or for data sets collected by the MODIS instrument. If a data set exists in the EDG, a special link will connect the user directly from the description to the EDG so that the data can be browsed or ordered. Other links will direct the user to online data, documentation, and other information.

*Note: Use the GCMD to search for information about data and services. To order EOSDIS data, use search-and-order systems such as the EDG or DAAC-specific systems.*

### **EOS Data Gateway (EDG) <http://eos.nasa.gov/imswelcome/>**

The EDG is the primary access point to EOSDIS data. The EDG search-and-order tool provides access to more than 2,100 data sets held at 19 data centers. This system allows users, including those without specific knowledge of the data, to search science data holdings, retrieve high-level descriptions of data sets and detailed descriptions of the data inventory, view browse images, and place orders for data products.

The EDG search-and-order tool has the following features:

- ***Browse Capability***--Allows a user to explore the list of data sets or granules returned by a search by viewing their temporal coverage, spatial coverage, attributes (metadata), related documents (guide search), and browse images.
- ***Order Function***--Allows the user to select data for ordering, choose packaging information, enter ordering information (such as shipping address), and place an order.
- ***EOS and Related Search and Access Tools***--Provides links to other search and access resources for EOS and related data.

<u><b>9 Main DAACs</b></u>	<b>Specialty</b>
<p><b>Alaska Satellite Facility (ASF) DAAC</b> <a href="http://www.asf.alaska.edu/">http://www.asf.alaska.edu/</a></p> <p>The ASF DAAC is located in the Geophysical Institute at the University of Alaska Fairbanks. The ASF DAAC is supported by NASA to acquire, process, archive, and distribute Synthetic Aperture Radar (SAR) data from polar-orbiting satellites.</p>	<ul style="list-style-type: none"> <li>• <b>Synthetic Aperture Radar (SAR)</b> <ul style="list-style-type: none"> <li>• <b>Sea Ice</b></li> </ul> </li> <li>• <b>Polar Processes</b></li> <li>• <b>Geophysics</b></li> </ul>
<p><b>Crustal Dynamics Data Information System (CDDIS)</b> <a href="http://cddis.gsfc.nasa.gov/">http://cddis.gsfc.nasa.gov/</a></p> <p>The CDDIS serves as NASA's archive of space geodesy data. The system archives and distributes Global Positioning System (GPS), Global Navigation Satellite System (GLONASS), laser ranging, Very Long Baseline Interferometry (VLBI), and Doppler Orbitography and Radio-positioning Integrated by Satellite (DORIS) data.</p>	<ul style="list-style-type: none"> <li>• <b>Crustal Dynamics</b></li> </ul>
<p><b>GSFC Earth Sciences Data and Information Services Center (GES DISC)</b> <a href="http://disc.gsfc.nasa.gov/">http://disc.gsfc.nasa.gov/</a></p> <p>The NASA GES DISC DAAC provides data and services that enable users to fully realize the scientific, educational, and application potential of global climate data.</p>	<ul style="list-style-type: none"> <li>• <b>Atmospheric Composition</b></li> <li>• <b>Atmospheric Dynamics</b></li> <li>• <b>Global Precipitation</b> <ul style="list-style-type: none"> <li>• <b>Ocean Biology</b></li> <li>• <b>Ocean Dynamics</b></li> <li>• <b>Solar Irradiance</b></li> </ul> </li> </ul>
<p><b>Global Hydrology Resource Center (GHRC)</b> <a href="http://ghrc.msfc.nasa.gov/">http://ghrc.msfc.nasa.gov/</a></p> <p>The GHRC provides both historical and current Earth science data, information, and products from satellite, airborne, and surface-based instruments. The GHRC acquires basic data streams and produces derived products from many instruments spread across a variety of instrument platforms.</p>	<ul style="list-style-type: none"> <li>• <b>Hydrologic Cycle</b></li> <li>• <b>Severe Weather Interactions</b> <ul style="list-style-type: none"> <li>• <b>Lightning</b></li> <li>• <b>Convection</b></li> </ul> </li> </ul>
<p><b>Land Processes (LP) DAAC</b> <a href="http://lpdaac.usgs.gov/">http://lpdaac.usgs.gov/</a></p> <p>The LP DAAC ingests, processes, distributes, and archives data for land-related EOS sensors. The LP DAAC promotes interdisciplinary study and understanding of Earth's integrated systems by providing data for the investigation, characterization, and monitoring of biologic, geologic, hydrologic, ecologic, and related conditions and processes.</p>	<ul style="list-style-type: none"> <li>• <b>Land Processes</b></li> </ul>
<p><b>Level 1 Atmosphere Archive and Distribution System (MODAPS)</b> <a href="http://ladsweb.nascom.nasa.gov/">http://ladsweb.nascom.nasa.gov/</a></p> <p>The MODAPS provides access to Moderate Resolution Imaging Spectroradiometer (MODIS) Radiance (Level 1) and Atmosphere (Level 2 and Level 3) data products, and supports data from both the Aqua and Terra platforms.</p>	<ul style="list-style-type: none"> <li>• <b>Radiance</b></li> <li>• <b>Atmosphere</b></li> </ul>

<p><b>Langley Research Center Atmospheric Science Data Center (LaRC ASDC)</b> <a href="http://eosweb.larc.nasa.gov/">http://eosweb.larc.nasa.gov/</a></p> <p>The NASA LaRC ASDC supports more than 35 projects and has more than 800 archived data sets. These data sets were obtained from satellite measurements, field experiments, and modeled data products.</p>	<ul style="list-style-type: none"> <li>• <b>Radiation Budget</b> <ul style="list-style-type: none"> <li>• <b>Clouds</b></li> <li>• <b>Aerosols</b></li> </ul> </li> <li>• <b>Tropospheric Chemistry</b></li> </ul>
<p><b>National Snow and Ice Data Center (NSIDC) DAAC</b> <a href="http://nsidc.org/daac/">http://nsidc.org/daac/</a></p> <p>The NSIDC DAAC provides data and information for snow and ice processes, particularly interactions among snow, ice, atmosphere, and ocean, in support of research in global change detection and model validation. NSIDC also provides general data and information services to the cryospheric and polar processes research community.</p>	<ul style="list-style-type: none"> <li>• <b>Cryosphere</b></li> <li>• <b>Snow and Ice</b></li> <li>• <b>Climate</b></li> </ul>
<p><b>Oak Ridge National Laboratory (ORNL) DAAC</b> <a href="http://www.daac.ornl.gov/">http://www.daac.ornl.gov/</a></p> <p>The ORNL DAAC provides data and information about the dynamics between the biological, geological, and chemical components of Earth's environment. These dynamics are influenced by interactions between organisms and their physical surroundings, including soils, sediments, water, and air.</p>	<ul style="list-style-type: none"> <li>• <b>Biogeochemical Dynamics</b></li> <li>• <b>Ecological Data</b></li> <li>• <b>Environmental Processes</b></li> </ul>
<p><b>Ocean Biology Processing Group</b> <a href="http://oceancolor.gsfc.nasa.gov/">http://oceancolor.gsfc.nasa.gov/</a></p> <p>The OceanColor data facility archives and distributes ocean color data from several sensors, including Moderate Resolution Imaging Spectroradiometer (MODIS) Aqua, Sea-Viewing Wide Field-of-View Sensor (SeaWiFS), Ocean Color and Temperature Scanner (OCTS), and Coastal Zone Color Scanner (CZCS), as well as sea surface temperature data from MODIS on Terra and Aqua platforms.</p>	<ul style="list-style-type: none"> <li>• <b>Ocean Biology</b></li> <li>• <b>Ocean Color</b></li> </ul>
<p><b>Physical Oceanography (PO) DAAC</b> <a href="http://podaac.jpl.nasa.gov/">http://podaac.jpl.nasa.gov/</a></p> <p>The NASA JPL PO.DAAC provides global oceanographic data from spaceborne instruments and produces higher level data products. Core holdings include ocean surface topography, ocean winds, and sea surface temperatures. Other holdings include data on significant wave height, ionospheric electron content, atmospheric moisture, and heat flux, as well as in situ data related to the satellite data.</p>	<ul style="list-style-type: none"> <li>• <b>Oceanic Processes</b></li> <li>• <b>Air-Sea Interactions</b></li> </ul>
<p><b>Socioeconomic Data and Applications Data Center (SEDAC)</b> <a href="http://sedac.ciesin.columbia.edu/">http://sedac.ciesin.columbia.edu/</a></p> <p>SEDAC's missions are to synthesize Earth science and socioeconomic data and information in ways useful to a wide range of decision makers and other applied users, and to provide an "Information Gateway" between the socioeconomic and Earth science data and information domains.</p>	<ul style="list-style-type: none"> <li>• <b>Population</b></li> <li>• <b>Sustainability</b></li> <li>• <b>Geospatial Data</b></li> <li>• <b>Multilateral Environmental Agreements</b></li> </ul>