

## Solar Dynamic Observatory

RTEMS (<http://www.rtems.com>) is an Open Source RTOS providing a powerful development and run-time environment that promotes the production of efficient real-time embedded applications.

### Features:

- Scalable Architecture
- Modified GPL License
- Multiple APIs - Classic, POSIX
- Event-driven multitasking
- Priority-based, preemptive scheduling
- Responsive Interrupt Management
- Optional Rate Monotonic Scheduling
- Priority Inheritance and Ceiling Protocols
- Intertask communication and synchronization
- Homogeneous and heterogeneous multiprocessor systems
- Reentrant ANSI C Library
- Add-on libraries including Python, Lua, and Tcl
- High performance BSD TCP/IP Stack
- Protocols: TCP, UDP, BOOTP, ARP, ICMP
- Servers: FTPD, HTTPD, TELNETD
- Clients: DHCP, NTP, DNS, TFTP

### Processors Supported:

M680x0	ix86	Coldfire	ARM
M683xx	Pentium	MIPS	Blackfin
PowerPC	SuperH	SPARC	H8
NIOS2		SPARC64	

### Available Services:

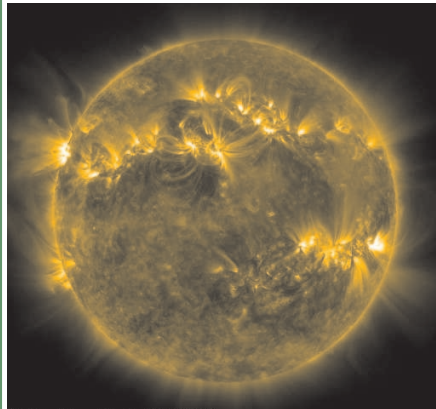
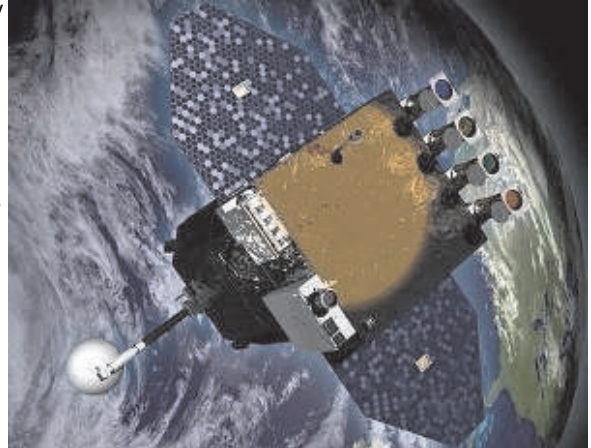
- Training
- Standard Support
- Legacy Support
- RTEMS Application Assistance
- Board Support Package Development
- Application Design and Development
- Ports to New Architectures
- System Architecture Design

### On-Line Applications

#### Research (OAR) Corporation

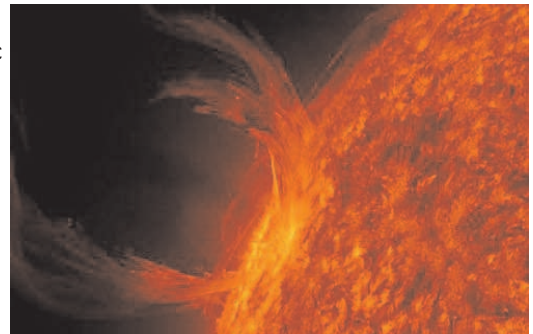
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The Solar Dynamics Observatory (SDO) is a NASA mission which will observe the Sun for over five years. Launched on February 11, 2010, the observatory is part of the Living With a Star (LWS) program. The goal of the LWS program is to develop the scientific understanding necessary to effectively address those aspects of the connected Sun–Earth system that directly affect life and society.



SDO's goal is to understand the Sun's influence on Earth and near-Earth space by studying the solar atmosphere on small scales of space and time and in many wavelengths simultaneously. SDO will investigate how the Sun's magnetic field is generated and structured, how this stored magnetic energy is converted and released into the heliosphere and geospace in the form of solar wind, energetic particles, and variations in the solar irradiance.

Some consider SDO to be a follow-on mission to the Solar and Heliospheric Observatory (SOHO). SDO is a 3-axis stabilized spacecraft, with two solar arrays, and two high-gain antennas. The spacecraft includes three instruments: the Extreme Ultraviolet Variability Experiment (EVE) built in partnership with the University of Colorado at Boulder's Laboratory for Atmospheric and Space Physics (LASP), the Helioseismic and Magnetic Imager (HMI) built in partnership with Stanford University, and the Atmospheric Imaging Assembly (AIA) built in partnership with the Lockheed Martin Solar & Astrophysics Laboratory. Data which is collected by the craft will be made available as soon as possible after it is received.



### References:

- SDO NASA Home Page  
- [http://www.nasa.gov/mission\\_pages/sdo/main/index.html](http://www.nasa.gov/mission_pages/sdo/main/index.html)
- Mission Home Page  
- <http://sdo.gsfc.nasa.gov/>
- Wikipedia Page  
- [http://en.wikipedia.org/wiki/Solar\\_Dynamics\\_Observatory](http://en.wikipedia.org/wiki/Solar_Dynamics_Observatory)
- RTEMS Wiki Page  
- [http://ftp.rtems.com/wiki/index.php/Solar\\_Dynamic\\_Observatory](http://ftp.rtems.com/wiki/index.php/Solar_Dynamic_Observatory)