

# CDDIS 2000 GLOBAL DATA CENTER REPORT

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## 1 Introduction

The Crustal Dynamics Data Information System (CDDIS) has supported the archive and distribution of laser ranging data (both lunar and satellite) since its inception in 1982. This report summarizes the activities for the year 2000 and future plans of the CDDIS with respect to the International Laser Ranging Service (ILRS). General CDDIS background and system information can be found in the CDDIS data center summary included in the ILRS 1999 Annual Report.

The CDDIS successfully responded to the 1998 Call for Participation in the International Laser Ranging Service (ILRS). This response stated that the CDDIS would support data center activities by providing access to an archive of laser ranging data, both to orbiting satellites (SLR) and to the moon (LLR). This archive consists of data (SLR on-site normal points, SLR full-rate, and LLR normal points), information about these data, and products derived from these data.

The CDDIS is located at NASA Goddard Space Flight Center and is operational on a dedicated Compaq AlphaServer 4000 running the UNIX operating system. The CDDIS archive of laser ranging data and products are accessible to the public via anonymous ftp and the WWW at address *ftp://cddisa.gsfc.nasa.gov/pub/slr* and *ftp://cddisa.gsfc.nasa.gov/pub/reports*.

## 2 Developments in 2000

### 2.1 SLR Data and Products Archive

A summary of all data received during 2000 can be found in Section 8.

The CDDIS staff has recently enhanced the automated routines that peruse the accounts of the two sources (HTSI and EDC) of laser data. These programs now create and augment merged, time-sorted, monthly satellite files as well as copy new files to the public disk areas. The monthly files contain data for the specific month and satellite; therefore users can easily retrieve data for a particular time span.

The CDDIS began the archive of hourly SLR data files in 2000 to aid in the generation of satellite predictions for several recent missions. These files contain all laser ranging data received at HTSI (both from individual stations and through the EDC) during the previous hour and are archived at the CDDIS within ten minutes following the start of the hour. These files can be found in the yearly "allsat" directories on CDDIS:

*ftp://cddisa.gsfc.nasa.gov/pub/slr/slrql/allsat/yyyy/new\_qlyymmddt.allsat*

where **yyyy** is the four-digit year, **yy** is the two-digit year, **mm** is the two-digit month, **dd** is the two-digit day, and **h** is the hour (a through x). All data available in these hourly files will be delivered the following day in the daily *allsat* file as well as the individual satellite files. The hourly files are retained on-line on the CDDIS for three days after which time they are deleted.

The staff also created automated routines to archive prediction files posted to the CDDIS on a daily and sub-daily basis. The daily files were then merged into yearly prediction files to reduce the number of individual files archived.

During 2000, the CDDIS archived SLR product files for new ILRS Analysis Working Group (AWG) pilot projects to compare individual analysis center solutions of station positions and Earth orientation parameters. These solutions were deposited in the CDDIS by the ILRS Analysis and Associate Analysis Centers and copied to public disk areas within the SLR data directories. The CDDIS staff also assisted the AWG by generating specialized LAGEOS data sets to be utilized by the analysts in their pilot projects.

## 2.2 Support of the ILRS Central Bureau

The CDDIS staff instituted several e-mail distribution lists (or exploders) to aid communication within the ILRS infrastructure. A list of these exploders and their members can be viewed at URL [http://ilrs.gsfc.nasa.gov/ilrs\\_exploders.html](http://ilrs.gsfc.nasa.gov/ilrs_exploders.html) and is shown in Table 1. Furthermore, the staff created automated procedures to maintain these exploders, particularly when updates are made to the ILRS personnel data base.

**Table 1. ILRS E-Mail Distributions Lists Maintained at the CDDIS**

<b>Distribution List</b>	<b>Address</b>
ILRS General Distribution	<i>ilrs@ilrs.gsfc.nasa.gov</i>
Central Bureau	<i>cb@ilrs.gsfc.nasa.gov</i>
Governing Board	<i>ilrs.gb@ilrs.gsfc.nasa.gov</i>
Analysis Centers	<i>ilrs.ac@ilrs.gsfc.nasa.gov</i>
Associate Analysis Centers	<i>ilrs.aac@ilrs.gsfc.nasa.gov</i>
Data Centers	<i>ilrs.dc@ilrs.gsfc.nasa.gov</i>
Operation Centers	<i>ilrs.oc@ilrs.gsfc.nasa.gov</i>
Stations	<i>ilrs.sta@ilrs.gsfc.nasa.gov</i>
Predictions	<i>ilrs.pred@ilrs.gsfc.nasa.gov</i>
Urgent messages (e.g., satellite maneuvers)	<i>urgent@ilrs.gsfc.nasa.gov</i>
Webmasters	<i>ilrs.web@ilrs.gsfc.nasa.gov</i>
Technique Coordinators	<i>tech.coor@ilrs.gsfc.nasa.gov</i>
Missions Working Group	<i>ilrs.mwg@ilrs.gsfc.nasa.gov</i>
Analysis Working Group	<i>ilrs.awg@ilrs.gsfc.nasa.gov</i>
Data Formats and Procedures Working Group	<i>ilrs.dfpwg@ilrs.gsfc.nasa.gov</i>
Networks and Engineering Working Group	<i>ilrs.newg@ilrs.gsfc.nasa.gov</i>
Signal Processing Working Group	<i>ilrs.sp@ilrs.gsfc.nasa.gov</i>

A new report was developed to allow the ILRS community to view the operational status of ILRS stations, past, current, and future. This report is maintained at the CDDIS and can be viewed at [http://ilrs.gsfc.nasa.gov/station\\_status.txt](http://ilrs.gsfc.nasa.gov/station_status.txt) (last 15 weeks) and [http://ilrs.gsfc.nasa.gov/station\\_status\\_full.txt](http://ilrs.gsfc.nasa.gov/station_status_full.txt) (entire year). ILRS stations are tasked to send a weekly e-mail message to the ILRS stating their current status (operational, engineering, temporarily non-operational, or long-term non-operational); CDDIS staff peruse these messages and update the status files daily.

The CDDIS staff also assisted the ILRS Central Bureau in preparation and publication of the 1999 ILRS annual report.

The CDDIS computer facility hosts the web site for the ILRS (<http://ilrs.gsfc.nasa.gov>). The staff has created several forms within this web site to allow users to query the SLR data holdings of the CDDIS. There are also forms for viewing ILRS associate information and providing updates to this information. These query forms are listed in Table 2.

**Table 2. ILRS Query Forms**

<b>Form</b>	<b>URL</b>
View SLR data by station for a specified satellite	<a href="http://ilrs.gsfc.nasa.gov/slrsat_query.html">http://ilrs.gsfc.nasa.gov/slrsat_query.html</a>
View SLR data by station for a specified satellite and time span	<a href="http://ilrs.gsfc.nasa.gov/slrsatdate_query.html">http://ilrs.gsfc.nasa.gov/slrsatdate_query.html</a>
View SLR data by satellite for a specified station	<a href="http://ilrs.gsfc.nasa.gov/slresta_query.html">http://ilrs.gsfc.nasa.gov/slresta_query.html</a>
View SLR data by satellite for a specified station and time span	<a href="http://ilrs.gsfc.nasa.gov/slrstadate_query.html">http://ilrs.gsfc.nasa.gov/slrstadate_query.html</a>
View ILRS personnel information by ILRS affiliation	<a href="http://ilrs.gsfc.nasa.gov/ilrs_personnel.html">http://ilrs.gsfc.nasa.gov/ilrs_personnel.html</a>
View personnel information by name	<a href="http://ilrs.gsfc.nasa.gov/ilrs_personnel.html">http://ilrs.gsfc.nasa.gov/ilrs_personnel.html</a>

### 3 Contact Information

To obtain more information about the CDDIS archive of ILRS data and products, contact:

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Code 920.1	E-mail: <a href="mailto:noll@cddis.gsfc.nasa.gov">noll@cddis.gsfc.nasa.gov</a>
NASA GSFC	WWW: <a href="http://cddisa.gsfc.nasa.gov/cddis_welcome.html">http://cddisa.gsfc.nasa.gov/cddis_welcome.html</a>
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