ILRS Update

ILRS Central Bureau
NASA GSFC, Greenbelt, MD USA
cb@ilrs.gsfc.nasa.gov

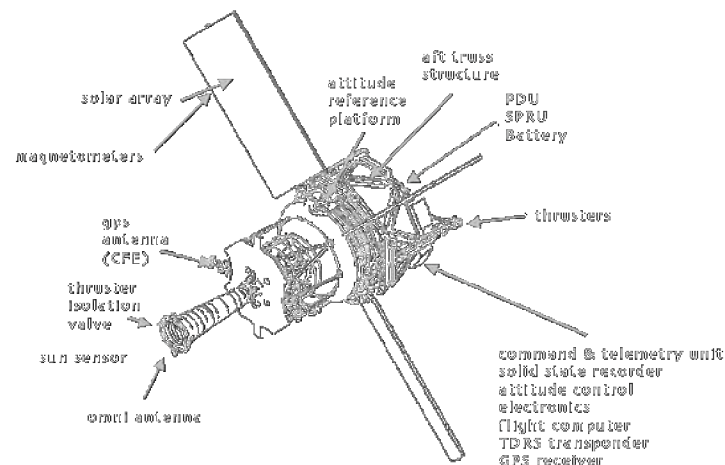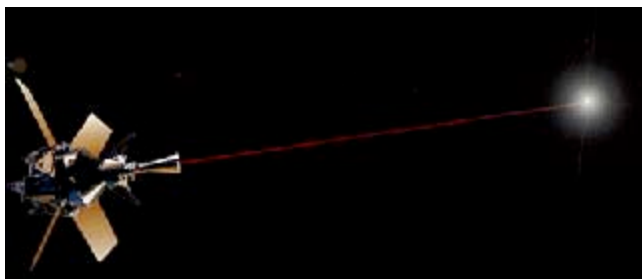# ILRS Update

- **Station news:**
  - ✦ New Mt. Stromlo station in testing; dedication held on April 1, 2004
  - ✦ SALRO station doing well; GPS receiver installed
  - ✦ NASA SLR program being restructured to accommodate budget cut in FY04
  - ✦ HOLLAS to close by end of 2004
  - ✦ Grasse SLR station (7835) closed end of May 2003
  - ✦ Arequipa operations uncertain at this time

- **Satellite news:**
  - ✦ GP-B scheduled for launch no earlier than April 19
  - ✦ GFO re-acquisition is imminent
  - ✦ Awaiting specifications on Galileo retroreflector array
  - ✦ Should we approach GPS-III regarding retroreflectors on board?
  - ✦ Problem with Meteor-3M data yield; signal strength very low

Gravity Probe B (GP-B)

- Launch scheduled for no earlier than April 19

- Relativity gyroscope experiment developed by NASA and Stanford University to test two unverified predictions of Einstein's general theory of relativity

- Satellite consists of 4 gyroscopes, quartz telescope, GPS receiver, and retroreflector array

- 16 month mission; tracking will commence 5-6 weeks following launch

- Satellite tracking provided by GPS and SLR

- SLR predictions will be generated by two centers

- Project will generate station pass list distributed through normal prediction channels
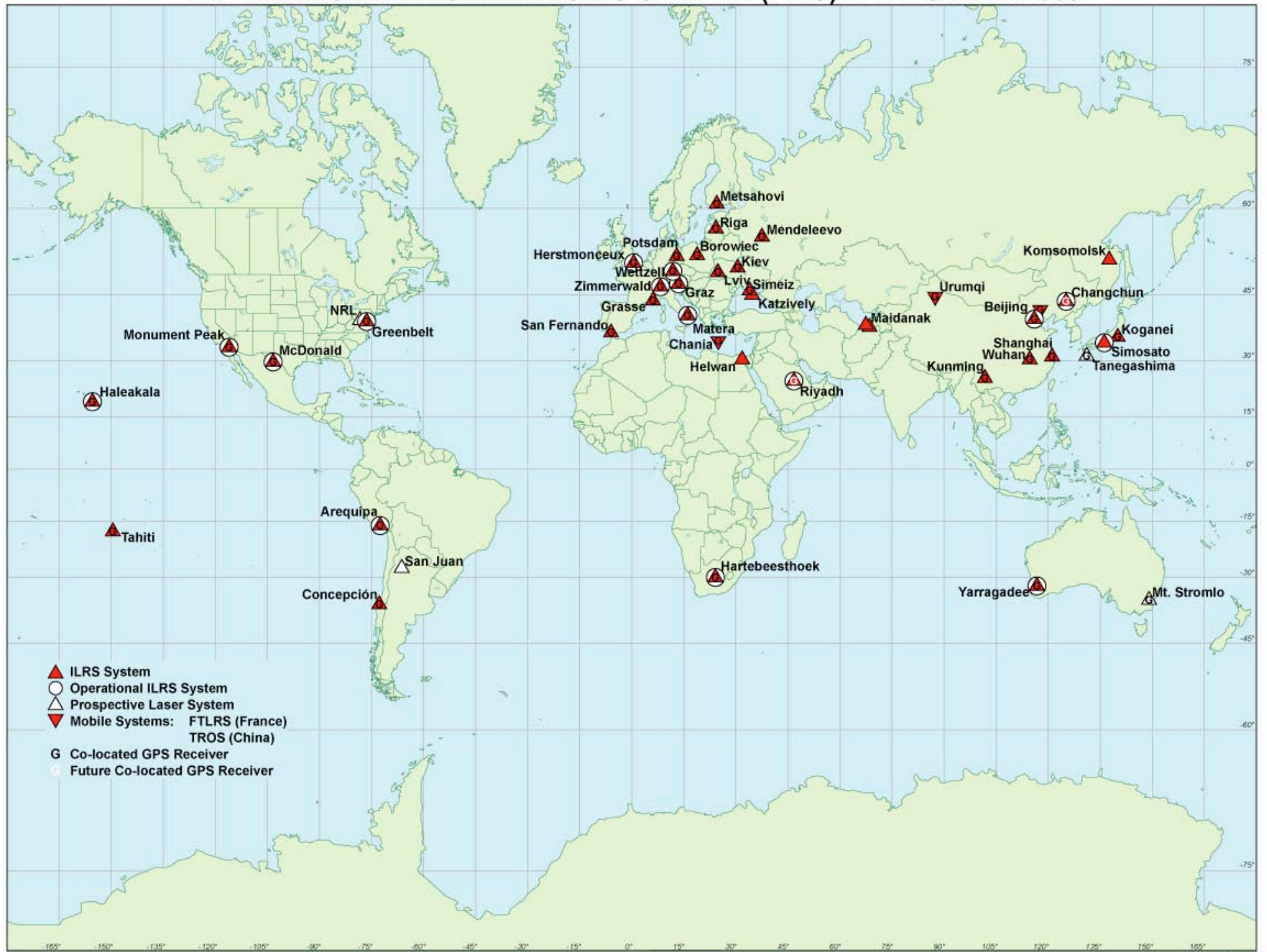
ILRS Update
(continued)

- ## Central Bureau Activities

  - ✦ Significant reduction in HTSI headquarters support

  - ✦ Proceedings from 2002 Washington laser ranging workshop (hardcopy and CD) issued in December 2003

  - ✦ 2002 ILRS Annual Report in printing; plan to issue combined 2003/2004 annual report

  - ✦ Fourth quarter 2003 ILRS station report card issued; first quarter 2004 ILRS report card with performance charts in process

  - ✦ INDIGO now funded and will support NASA participation in IGGOS and IERS

- ## Meetings:

  - ✦ ILRS General Assembly and WG meetings held in Nice in April 2003

  - ✦ ILRS Technical Workshop held in Koetzting in October 2003

  - ✦ Next laser ranging workshop, ILRS General Assembly, and WG meetings to be held in San Fernando June 7-11, 2004

ILRS Update
(continued)

- ## Site surveys:

  - ✦ Site surveys conducted at Hartebeesthoek and Shanghai; survey planned for Beijing

  - ✦ Analysis of survey data from Hartebeesthoek, Shanghai, Hawaii, Arequipa, and GSFC in progress

- ## Other items:

  - ✦ Analysis WG continues to work on development of ILRS standard products

  - ✦ NERC assisting in screening of data from stations

  - ✦ ILRS data centers providing access to all SLR data files within 5 minutes of receipt

  - ✦ CDDIS plans to modify SLR data archive structure to coincide with operation of new server; new archive intended to be more user friendly

INTERNATIONAL LASER RANGING SERVICE (ILRS) NETWORK IN 2003

Legend:

- ▲ ILRS System
- ◯ Operational ILRS System
- △ Prospective Laser System
- ▼ Mobile Systems: FTLRS (France) / TROS (China)
- G Co-located GPS Receiver
- G Future Co-located GPS Receiver

Map labels: Metsahovi, Riga, Mendeleevo, Komsomolsk, Potsdam, Borowiec, Herstmonceux, Kiev, Wettzell, Lviv, Simeiz, Urumqi, Changchun, Zimmerwald, Graz, Katzively, Beijing, Koganei, Grasse, Maidanak, Shanghai, Simosato, San Fernando, Matera, Wuhan, Tanegashima, NRL, Greenbelt, Chania, Kunming, Monument Peak, Helwan, McDonald, Riyadh, Haleakala, Arequipa, Tahiti, San Juan, Concepción, Hartebeesthoek, Yarragadee, Mt. Stromlo
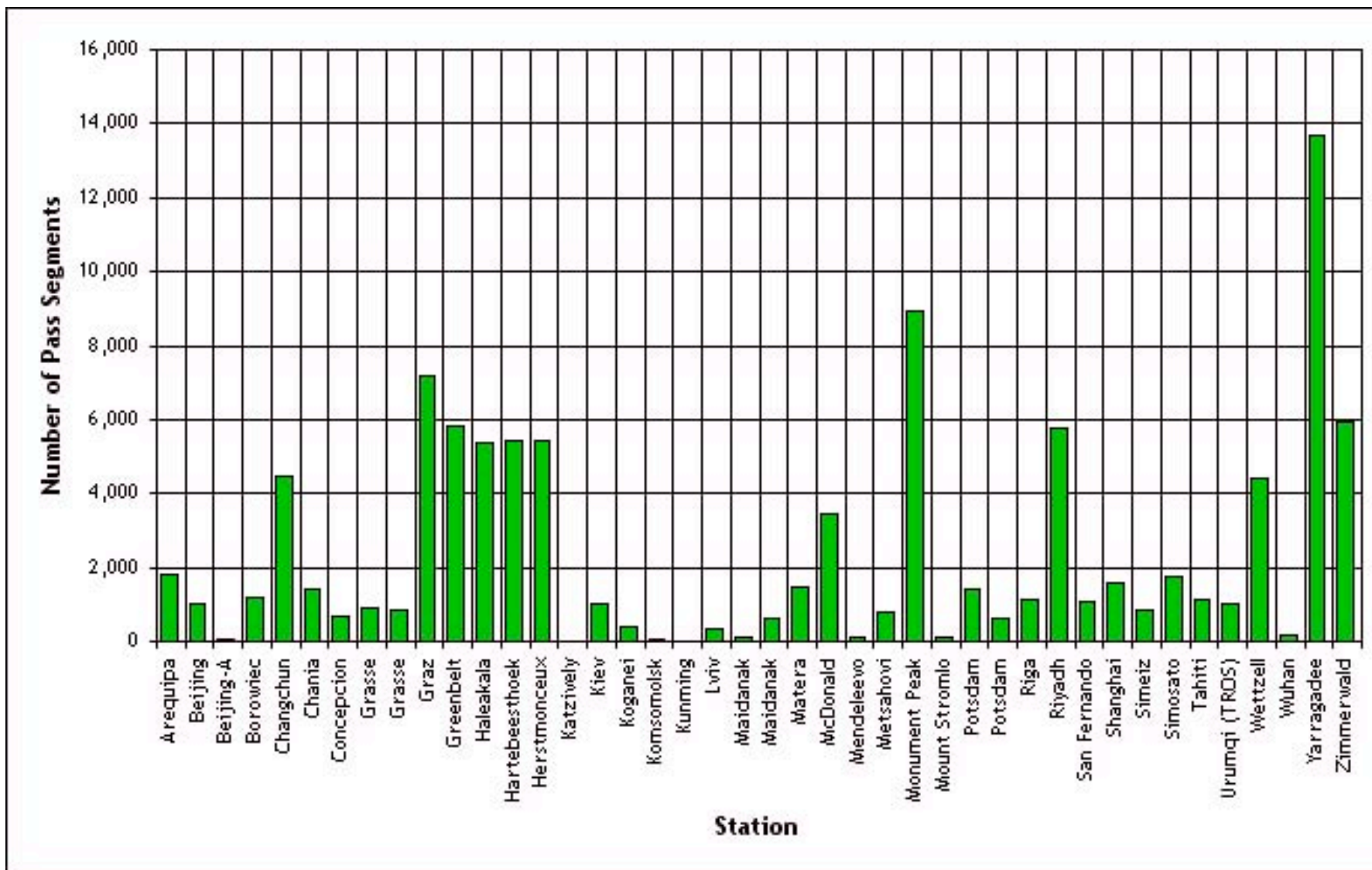
04/14/2004

ILRS Satellite Tracking Summary
2003
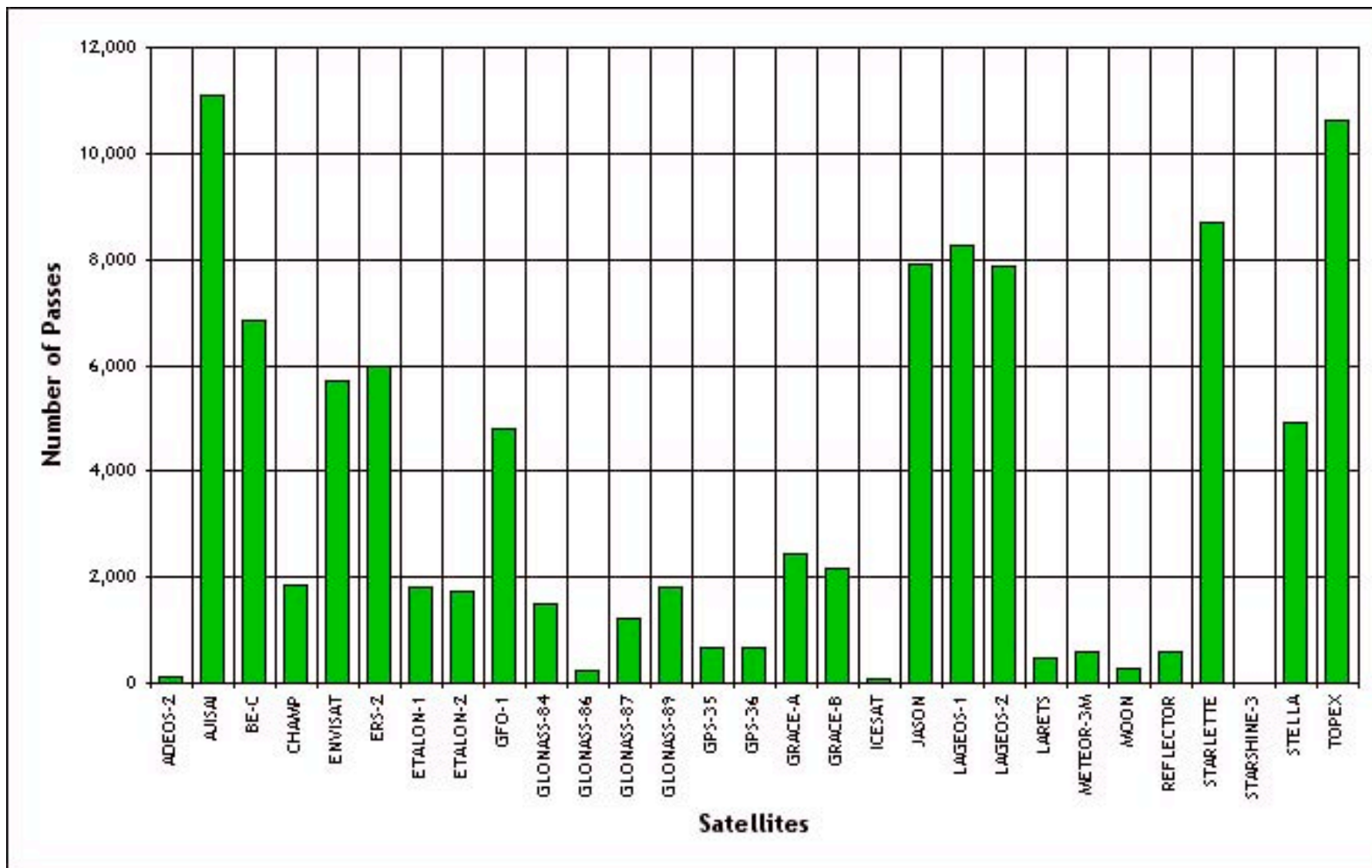
ILRS Station Tracking Summary
2003

CDDIS Data Archive
Proposed Structure

```
/pub/slr/data/
        /npt/SATNAME/YEAR/SATNAME.YYMMDD                    (daily combined file by satellite)
                    /SATNAME.YYMM                           (monthly file)
                    /sum/SATNAME_sum.YYMM                   (monthly summary file)
            /allsat/YEAR/nasa_allsat.YYMMDD    (daily HTSI file includes data from NASA stations only for all satellites)
                    /edc_allsat.YYMMDD    (daily EDC file includes data from EUROLAS stations only for all satellites)
                    /allsat.YYMMDD                          (daily combined file for all satellites)
                    /allsatH.YYMMDD                         (hourly combined file for all satellites)
                    /allsat.YYMM                            (monthly file for all satellites)
                    /sum/allsat_sum.YYMM                    (monthly summary file)


        /fr/SATNAME/YEAR/SATNAME_V.YYMM.Z                   (monthly file)
                    /sum/SATNAME_V_sum.YYMM.Z               (monthly summary file)
                    /daily/SSSS/SSSS_YYMMDD_V.SATNAME.Z     (daily file)
                    /npt/YYYY/SATNAME_V_npt.YYMM.Z    (monthly file of normal points created from full-rate)
                        /sum/SATNAME_V_npt_sum.YYMM.Z (monthly summary file of normal points created from full-rate)


        /llrnpt/YEAR/llr_npt.YYMM.Z                         (monthly LLR normal points, prior to 1999)
        /llrnpt/YEAR/sum/llr_npt_sum.YYMM.Z                 (monthly LLR normal point summary, prior to 1999)
```

SATNAME=satellite name (agreed to list)
YEAR=4-digit year
YY=2-digit year
MM=2-digit month
DD=2-digit day
H=1-digit hour of day
V=version number
SSSS=4-digit station number