The Gemini Science Archive
Hosted by CADC in Victoria, Canada.
Released September 2004
Gemini North data from May 2000
Gemini South data from October 2001
E-transfer started October 2005 – automatic transfer from sites to CADC.
Active transfer from sites to archive as observation progresses.
Distinct (0.1 degrees) GSA Pointings

- Taurus/Auriga
- Virgo Cluster
- Galactic Centre
- SMC and LMC

OPD, SOAR, Gemini – Brazil
2010-03-09
Database is populated with content of header keywords
- Header content is enforced from the time of ingestion – if a mandatory keyword is absent, the dataset is rejected until fixed
- Metadata related to individual observations is obtained from the Observing Tool – very little information is required to be added by the observer (environmental information in terms of realized percentiles, name of observer/operator).
- Instrument/telescope related information is passed directly from subsystems to the Data Handling System
- Result in complete, stable header content.
- Filename format is fixed and unique (S2011019S0412.fits)
- Each dataset is uniquely identified by a datalabel, containing the name of the programme (GS–2011B–Q–13–24–350)
- Observing logs are generated as observation progresses, and the observer can add comments, but not change content.
As of October 5, 2011:

- ~10.4 Tb total data volume
- ~7 Gb nightly transfer
- ~1.7 million FITS files (estimate over 99% of all science data obtained by Gemini is available from the GSA)
- average delivery ~9Gb/day
- average 300 queries/day
- 1188 registered users from 32 countries
Proprietary Data

- Proprietary period 18 months from date of observation
- CADC registration required
- Access through Phase II passkey
- Authorize other users without releasing Phase II key
- Download datasets any time or “packages” when available
Packages: created by Gemini Staff – trigger notification to users indicated in the ODB. Next day notification is available from Gemini FITS storage system, but package and/or processed calibrations may not yet exist in the GSA. Select the programme, then View Packages. Choose View/Retrieve for the package. Select the destination directory, enter your CADC user and password, and download. Packages remain in existence until the programme group is removed - no plans to do it until new e-distribution structure is released.
Remember: data availability DOES NOT depend on package creation. It just makes download more convenient. Use the List Datasets option: shows only SCIENCE data (no calibrations). Click any of the "List" links under "All Program Obs." All datasets are listed. Select the ones you want, and download with the processed calibrations. No obslogs!!! No panic: Search Observing Logs in the top menu. Enter the programme ID, search, select and download.
Authorize user first
Use proprietary data searches to enable access
Science Catalog contains only science datasets – no calibrations
Use Complete Catalog to search for calibrations
Obslogs are proprietary until first dataset goes public – then ALL obslogs become public.
Science Programs NOT available from outside packages – FETCH from ODB instead
Search public datasets – science and general catalogues; observing logs, science programmes (public information); publications using Gemini data, linked to corresponding programmes; search for processed calibrations.

Search science catalogue: single form, search by target (RA, Dec, name), observation (programme ID, date), instrument configuration.

Help is available on each field of the search pages. Easier if sorting by date or original file name.

Note the UT date, then use the “List All Program Obs.” link to get the calibrations!
Search complete catalogue: pre-defined forms for each instrument, or "any" instrument; can also create a search directly from different header keywords.

 Calibration association is a known issue. Mostly contained within the programme, but not easy to find when searching public data. See Gemini page, linked from GSA Help menu.

Search by Observation Type (check instrument pages and baseline calibration list first – understand the data you want to download!).

Download the observing log first!
Publications database: simple way to find what has been done with the data. Publications are linked to programmes, and programmes to science datasets. Then just select science and calibrations as previously described.

Need help? Use the Helpdesk select topic "Gemini Science Archive" (not the instrument) – please include which programme and other information on specific data sets (obsid #, target). If the data are too old and arcane for the NGO, Tier 2 is CADC, who will redirect it to me.

<table>
<thead>
<tr>
<th>Program ID</th>
<th>GS-2008B-Q-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner Country</td>
<td>Brazil</td>
</tr>
<tr>
<td>Science Datasets</td>
<td>All data public</td>
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<tr>
<td>Science Category</td>
<td>Non-Galactic</td>
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<tr>
<td>Keywords</td>
<td>Active galaxies, Elliptical galaxies, Galaxy center, LINERS, Seyfert galaxies</td>
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<tr>
<td>PI Name</td>
<td>Joao Steiner</td>
</tr>
<tr>
<td>Co-I Names</td>
<td>Roberto Menezes, Tiago Ricci, Alexandre Oliveira</td>
</tr>
<tr>
<td>Title</td>
<td>Search for very weak LINER 1 galactic nuclei</td>
</tr>
<tr>
<td>Abstract</td>
<td>We will search for the very low end of the luminosity function of LINERs type 1, proceeding with the study launched in semester 2008A. We expect to detect broad line emission in a good fraction of them (&gt;50%), even if the main LINER emitting source is non-nuclear. The knowledge of the super-massive black hole demography is relevant for establishing their mass function in the local universe. As a by-product, we expect to identify and quantify the diverse mechanisms that are contributing to the overall LINER emission - as well as locate them in space.</td>
</tr>
<tr>
<td>Instruments</td>
<td>GMOS-S</td>
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<tr>
<td>SB</td>
<td>1</td>
</tr>
<tr>
<td>Hours Allocated</td>
<td>6</td>
</tr>
</tbody>
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Future plans?

- PI packaging replacement:
  - Association of raw calibration with science files outside packages (and in the public archive!)
  - User configurable notification, via RSS feeds
  - Download via VOSpace (tree) or GSA pages
- Common Archive Operations Model (single search to all CADC archives), data products (visualization) and VO publication:
  - Raw Phoenix and GMOS imaging raw/processed.
- Long range plan: input/demand is needed from the user community – take your requests to the Gemini Sci&Tech Advisory Committee!
Questions?