



IPAC Archive Holdings

L. M. Rebull, 6 Jan 13



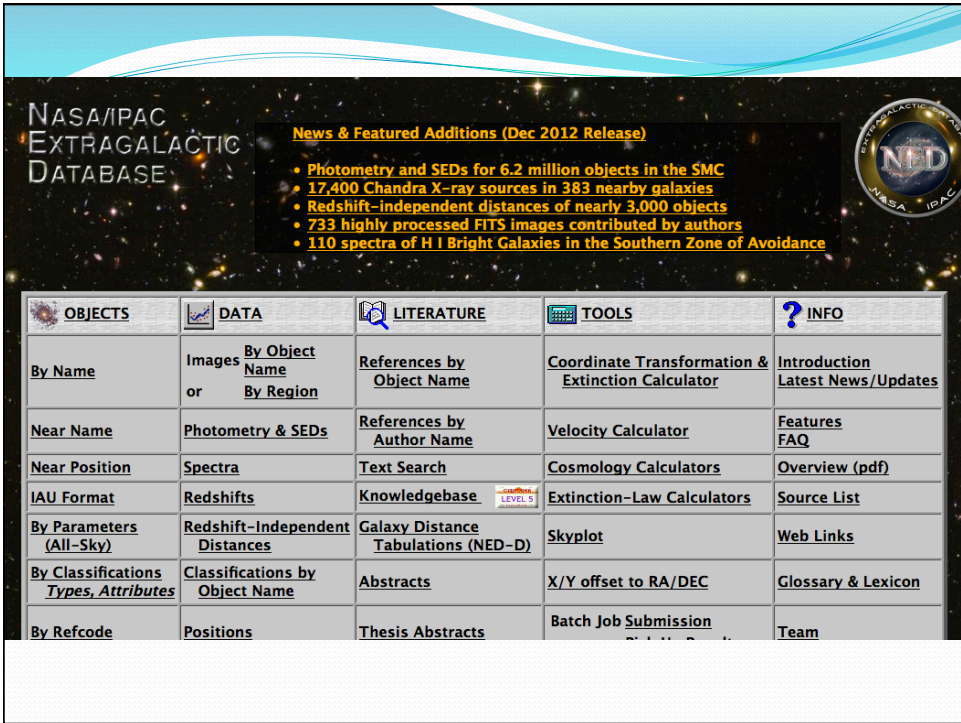
Why?

- The “I” in NITARP stands for “IPAC”, the Infrared Processing and Analysis Center, based at Caltech.
- IPAC is not the Astronomy Department!
- IPAC houses several different archives, each with their own goals, methodology, tools, staff, (and sometimes science goals).
- As NITARP educators, you will learn about at least one of our data sets in great detail, but the rest of IPAC’s holdings may also prove useful to you in your NITARP project, or your future (post-NITARP) work!
- ~All of IPAC has recently been consolidated into one booth (for better branding in the community!). There are archives based at other places that have other booths here too...



NED

- NED = NASA/IPAC Extragalactic Database
- Focused on extragalactic science.
- Ingests catalogs and literature tables.
- 176.9 million unique objects!
- Myriad cross-links, notes, etc.
- Updates every few months.
- <http://ned.ipac.caltech.edu/>



NASA/IPAC EXTRAGALACTIC DATABASE

News & Featured Additions (Dec 2012 Release)

- Photometry and SEDs for 6.2 million objects in the SMC
- 17,400 Chandra X-ray sources in 383 nearby galaxies
- Redshift-independent distances of nearly 3,000 objects
- 733 highly processed FITS images contributed by authors
- 110 spectra of H I Bright Galaxies in the Southern Zone of Avoidance

| OBJECTS | DATA | LITERATURE | TOOLS | INFO |
|---|--|--|--|---|
| By Name | Images <u>By Object Name</u> or <u>By Region</u> | References by <u>Object Name</u> | <u>Coordinate Transformation & Extinction Calculator</u> | <u>Introduction</u> <u>Latest News/Updates</u> |
| Near Name | <u>Photometry & SEDs</u> | References by <u>Author Name</u> | <u>Velocity Calculator</u> | <u>Features</u> <u>FAQ</u> |
| Near Position | <u>Spectra</u> | <u>Text Search</u> | <u>Cosmology Calculators</u> | <u>Overview (pdf)</u> |
| IAU Format | <u>Redshifts</u> | <u>Knowledgebase</u> | <u>Extinction-Law Calculators</u> | <u>Source List</u> |
| <u>By Parameters (All-Sky)</u> | <u>Redshift-Independent Distances</u> | <u>Galaxy Distance Tabulations (NED-D)</u> | <u>Skyplot</u> | <u>Web Links</u> |
| <u>By Classifications Types, Attributes</u> | <u>Classifications by Object Name</u> | <u>Abstracts</u> | <u>X/Y offset to RA/DEC</u> | <u>Glossary & Lexicon</u> |
| <u>By Refcode</u> | <u>Positions</u> | <u>Thesis Abstracts</u> | <u>Batch Job Submission</u> | <u>Team</u> |

NASA Exoplanet Archive



- Focused on stars harboring exoplanets, or thought to harbor exoplanets.
- Includes Kepler data, and US portal to CoRoT data.
- Those of you using Kepler data will get more of an introduction to this as part of your work.
- Online tools to work with these data, like the periodogram service.
- <http://exoplanetarchive.ipac.caltech.edu/>

NASA Exoplanet Archive

Home | Overview and Holdings | Documentation | Helpdesk

Interactive Tables

Search Interactive Tables

Browse Confirmed Planets

Kepler

Kepler Candidates:

Browse Kepler Objects of Interest (KOIs) Q1-Q6

Browse Kepler Threshold-Crossing Events (TCEs)

Tools

Viewable Transit Service

Search for a Planet or Stellar System

Periodogram and Light Curve Viewer

Transit and Ephemeris Predictor: All Confirmed Planets

Transit and Ephemeris Predictor: Kepler Objects of Interest

Current Exoplanet Archive Holdings


817 Planets around 642 Stars
2,320 Kepler Planetary Candidates
2,553,174 Transit Survey Light Curves

- *Planet parameters are updated weekly*
- *See the [Planet Counts](#) page for a breakdown by discovery method*
- *Pre-generated plots (see example, right) for exoplanets and Kepler candidates are also available*

Radius (Earth Radii)

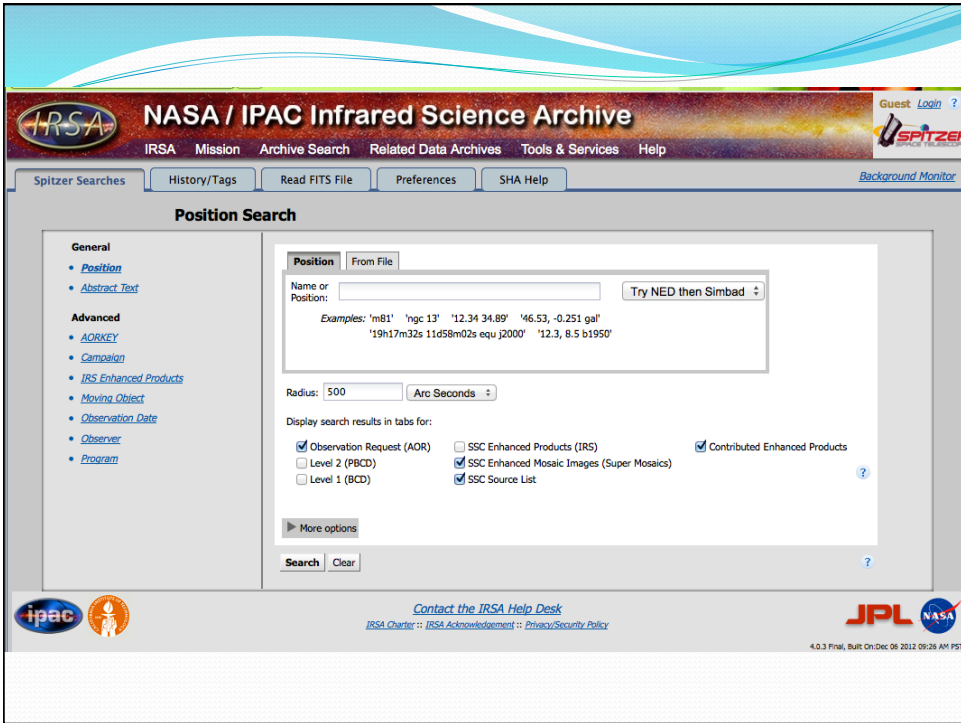
Transit Depth (ppm)

Latest News



Spitzer

- Spitzer is both an active mission and no longer an active mission. Its entire archive is available through IRSA (coming up).
- Those of you using Spitzer data will get more of an introduction to Spitzer in the context of your work.
- Spitzer’s data are available from the Spitzer Heritage Archive (SHA).
- It is the testbed for a new “look and feel” for all of IRSA’s holdings, and the same software is now used to serve several of the rest of IPAC’s holdings – like Planck!



IRSA NASA / IPAC Infrared Science Archive

IRSA Mission Archive Search Related Data Archives Tools & Services Help

Spitzer Searches History/Tags Read FITS File Preferences SHA Help Background Monitor

Position Search

General

- [Position](#)
- [Abstract Text](#)

Advanced

- [AORKEY](#)
- [Campaign](#)
- [IRS Enhanced Products](#)
- [Moving Object](#)
- [Observation Date](#)
- [Observer](#)
- [Program](#)

Position From File

Name or Position: [Try NED then Simbad](#)

Examples: 'm81' 'ngc 13' '12.34 34.89' '46.53, -0.251 gal'
'19h17m32s 11d58m02s equ j2000' '12.3, 8.5 b1950'

Radius: [Arc Seconds](#)



Display search results in tabs for:


| | | |
|---|--|---|
| <input checked="" type="checkbox"/> Observation Request (AOR) | <input type="checkbox"/> SSC Enhanced Products (IRS) | <input checked="" type="checkbox"/> Contributed Enhanced Products |
| <input type="checkbox"/> Level 2 (PBCD) | <input checked="" type="checkbox"/> SSC Enhanced Mosaic Images (Super Mosaics) | ? |
| <input type="checkbox"/> Level 1 (BCD) | <input checked="" type="checkbox"/> SSC Source List | |

[More options](#)

[?](#)

[Contact the IRSA Help Desk](#)
IRSA Charter :: IRSA Acknowledgment :: Privacy/Security Policy

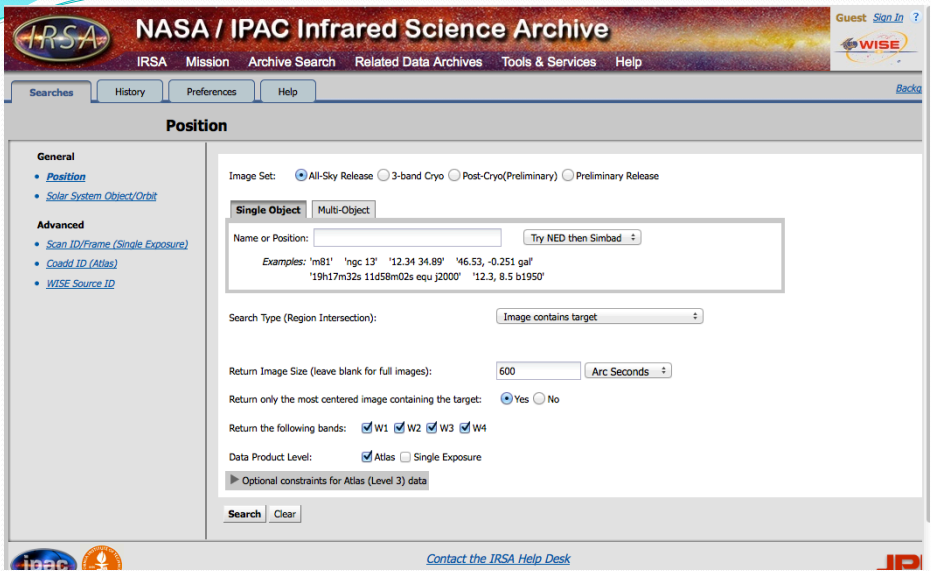
ipac   4.0.3 Final, Built On: Dec 06 2012 09:26 AM PST



WISE

- Widefield Infrared Survey Explorer (WISE) is no longer an active mission. Its entire archive is available through IRSA (coming up).
- They are still processing some of the archive, so there are still new data releases planned.
- Those of you using WISE data will get more of an introduction to WISE in the context of your work.
- WISE data (images and data tables) are available most transparently from the WISE archive.

Does this look familiar? Once you've mastered one of these archives through this interface, the rest are easier to pick up.



Position

Image Set: All-Sky Release 3-band Cryo Post-Cryo(Preliminary) Preliminary Release

Single Object Multi-Object

Name or Position: [Try NED then Simbad](#)

Examples: 'm81' 'ngc 13' '12.34 34.89' '46.53, -0.251 gal'
'19h17m32s 11d58m02s equ j2000' '12.3, 8.5 b1950'

Search Type (Region Intersection):

Return Image Size (leave blank for full images):

Return only the most centered image containing the target: Yes No

Return the following bands: W1 W2 W3 W4

Data Product Level: Atlas Single Exposure

Optional constraints for Atlas (Level 3) data

IRSA



- IRSA = NASA/IPAC Infrared Science Archive
- Charter is to provide interface to all NASA infrared and sub-mm data sets. Has a few others in there too.
- Some are small (e.g., Spitzer Legacy programs), and some are VERY large (all-sky surveys like WISE).
- IRSA datasets are cited in about 10% of astronomical refereed journal articles.
- Several of the newest data sets are served via Hydra; the rest are accessible via ATLAS or Gator.
- Total holdings in images: 88.1 TB, 17,684,845 images
- Total in catalogs: 20,668,829,117 sources
- Total in spectra: 16.62 GB, 157,712 spectra

Some IRSA holdings

- Infrared Astronomy Satellite (IRAS) – the first all-sky mid- and far-IR survey.
- **Two Micron All-Sky Survey (2MASS)** – a deep, uniform all-sky survey at J, H, and Ks.
- **Spitzer Space Telescope** – 3-160 microns (see earlier slide).
- **WISE** = Widefield Infrared Survey Explorer – all-sky survey at 3-23 μm
- Planck = ESA mission, all-sky survey at 30 to 857 GHz (1 cm to 350 microns)
- Balloon-borne Large Aperture Submillimeter Telescope (BLAST) – a prototype of Herschel's SPIRE camera flown on a balloon in 2005-2006.
- Cosmic Evolution Survey (COSMOS) - a multiwavelength survey of a 2 sq. degree field involving every Great Observatory as well as ground-based data.
- BOLOCAM – a millimeter wavelength bolometer array at the Caltech Submillimeter Observatory.
- AKARI – a Japanese IR telescope that surveyed the whole sky at 9-160 microns.
- Midcourse Science Experiment (MSX) – a mid-IR telescope that mapped the Galactic plane and the gaps in the IRAS all-sky coverage.
- Infrared Space Observatory (ISO) – US interface to the ESA archive for ISO.

IRSA NASA / IPAC Infrared Science Archive Guest [Sign In](#) ?

IRSA Mission Archive Search Related Data Archives Tools & Services Help

PLANCK Searches Catalogs Preferences Home > Multiple Wavelength (Name/Position) [Background Monitor](#)

Planck

Search By ...

- [Single Wavelength \(All-Sky\)](#)
- **Multiple Wavelength (Name/Position)**
- [Download Planck Products](#)

Name or Position: NED

Examples: 'm81' 'ngc 13' '12.34 34.89' '46.53, -0.251 gal'
'19h17m32s 11d58m02s equ j2000' '12.3, 8.5 b1950'

Radius (Degree): 0.5

Select Bands 30 GHz 44 GHz 70 GHz 100 GHz 143 GHz 217 GHz 353 GHz 545 GHz 857 GHz ECC

[Search](#) [Clear](#) ?

IRSA NASA / IPAC Infrared Science Archive Guest [Login](#) ?

IRSA Mission Archive Search Related Data Archives Tools & Services Help

Searches **History** Preferences Help Background Monitor

Finder Chart

Single-Object Multi-Object

Name or Position: Try NED then Simbad

Examples: 'm81' 'ngc 13' '12.34 34.89' '46.53, -0.251 gal'
'19h17m32s 11d58m02s equ j2000' '12.3, 8.5 b1950'

Image Size: 300 Arc Seconds

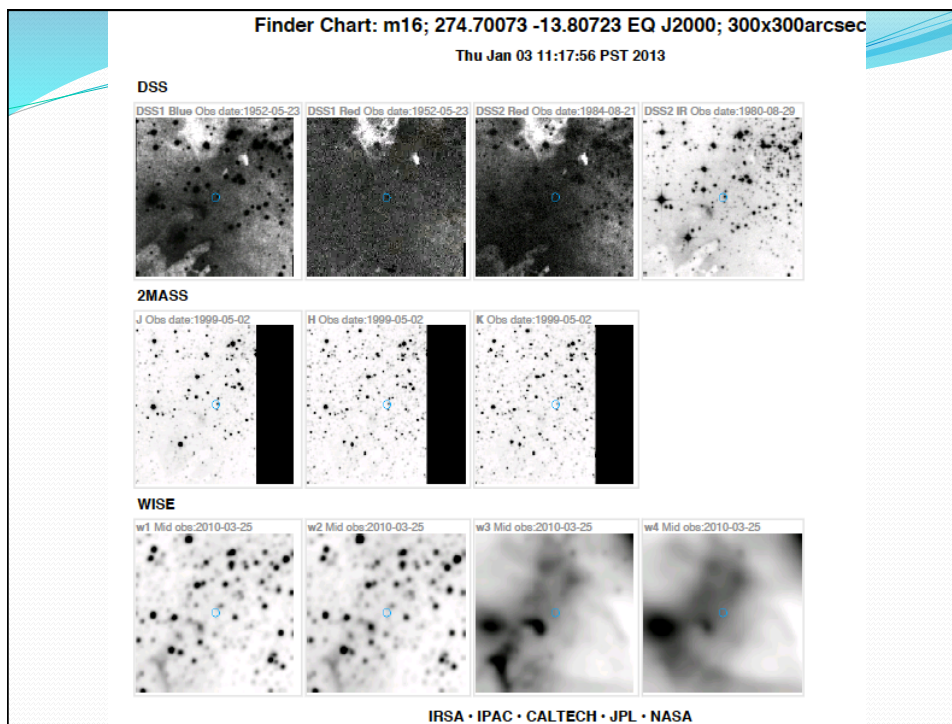
Display Size: Small Medium Large

Select Image(s): DSS SDSS 2MASS WISE IRAS (IRIS)

[Customize wavelength selection](#)

[Search](#) [Clear](#) ?

[Contact the IRSA Help Desk](#) 2.0 Final, Built On: Oct 29 2012 09:25 AM PDT



Summary

- LOTS of data available to you RIGHT NOW.
- Everything is web-based. Most are intuitive (I hope). Most have on-line help. They are getting more integrated all the time.
- Many have some related material on the NITARP wiki.
- All of these archives have (sub-)booths here at the AAS.
- You will learn more about archives specific to you as you work on your project, but don't be afraid to branch out and go exploring!