IRTF Data Archive Search Parameters

RA DEC [RA DEC] Radius [2 mins] NAME [NAME]

Date [DATE_OBS] PROG_ID [PROGRAM_ID]

[x] SBD
Spex Spectrograph
GRAT [▼ ANY] SLIT [▼ ANY] OSF [▼ ANY]

[x] SGD
Spex Guider/Imager
GFLT [▼ ANY] OSF [▼ ANY]

[x] ICM
iSHELL Spectrograph
XDMode [▼ ANY] Wavelen [wavelength]
Slit Width [▼ ANY]

[x] IKE
iSHELL Guider/Imager
GFLT [▼ ANY]

Airmass [AIRMASS]

Optical Depth (TAU) [TAU]

Seeing (DIMM) [DIMM]

Lunar Light Level
❍ Dark
❍ Gray
❍ Bright

Lunar Separation [LUN_SEP]

Sky Transparency
❍ Photometer
❍ cirrus
❍ cloudy

Search

RA DEC, Radius – Input RA,DEC and radius for position search. Radius range is from 1min to 5 min (2 is the default). Blank will match all positions. Data from .glbl label RA, TDEC keywords.

Name: Input the object name, or partial name. Search will match any name portion, ie: “jup”, would match “Jupiter (599)”. Data from .glbl label NAME keyword.

Date: Inclusive date for search, ie ”2016-02-22 2017-02-22”. Data from .glbl label DATE keywords.

PROG_ID: Search on the program Id, ie “2016A023”. Data from .glbl label PROGRAM_ID.

Airmass: Filter on Airmas value. From .gbl label AIRMASS

[ ] SBD - Select to include SpeX Spectrograph Data.
GRAT - a pull down menu to specify a SBD grating configuration. Menu choices are: ANY, ShortXD, Prism, LXD_Long, LXD_short, SO_Long, SO_short. Data from .glbl label file. .
SLIT – a pull down menu to specify a SBD slit setting. Menu choices are: ANY, Open, Mirror, r, 0.3x15, 0.5x15, 0.8x15, 1.6x15, 3.0x15, 0.3x60, 0.5x60, 0.8x60, 1.6x60, 3.0x60. Data from .glbl label file.
OSF – if GRAT==(SO_Long or SO_short), then allow selection of OSF. A pull down menu to specify a SBD OSF setting. Menu choices are: ANY, Open, PK_50, SP_2.5, 0.1xSTOP, Long4, Long5, Long6, Short3, Short4, Short5, Short6, Short7, CH4_s, CH4_l, Blank. Data from the .glbl label file.

[ ] SGD - Select to include SpeX GuideDog Data.
GFLT - a pull down menu to specify a GFlt configuration. Menu choices are: ANY, Open, Z, J, H, K, L', 5.1, FeII, H2, Bry, contK, CO+ND2, H+K, 3.417, ZYJHK. Data from .glbl label file.
OSF – A pull down menu to specify a SGD OSF setting. Menu choices are: ANY, Open, PK_50, SP_2.5, 0.1xSTOP, Long4, Long5, Long6, Short3, Short4, Short5, Short6, Short7, CH4_s, CH4_l, Blank. Data from the .glbl label file.

[ ] ICM - Select to include iSHELL Spectrograph Data.
XDMode - Cross Disperser (XD) mode. Menu choices are: ANY, J, JO, J1, J2, J3, J_custom, H, H1, H2, H3, H_custom, K, K1, K2, Kgas, K3, K_custom, L, L1, L2, L3, L_custom, Lp, Lp1, Lp2, Lp3, Lp4, Lp_custom, M, M1, M2, Darks. Data from the XDTILT keyword from the .glbl label file. The values [J, H, K, L, Lp, M] were added to include all sub-bands in the search, ie, J would include [J0, J1, J2, J3, J_custom].
Wavelength - Wavelength filter. If a value is entered, then match data with wavelength in range of WLEN_LOWER and WLEN_UPPER values from the .glbl label file.
Slit Width - Slit Width filter. Menu choices are: ANY, 0.375, 0.75, 1.5, 4.00, Mirror. Data from the SLIT keyword in the .glbl file.

[ ] IKE - Select to include iSHELL Guider/Imager Data.
GFLT - GFlt configuration. Menu choices are: ANY, K, Jo, PV, Blank, nbM, 3.46um, L, Kcont. Data from GFLT keywork in the .glbl label file.

Optical Depth(TAU): Input value to filter tau <= input. TAU225 keyword from .glbl file.
Seeing(DIMM): Input value to filter dimm <= input. DIMM keyword value from .glbl file.
Sky Transparancy: default=all checked, uncheck to filter. SKY_TRANS keyword from .glbl file.
Lunar Light Level: default=all checked, uncheck to filter. LUN_LIGHT keyword from .glbl file
Lunar Separation: Input value to filter on Lunar Separation, deg. LUN_SEP keyword from .glbl file.

Search - Performs the search based on the above filters. The search result page would appear next.

IRTF Data Archive Search Results

NAME	DATE_TIME_OF_OBS	PROGAM_ID	DY	INST_SETUP	GROUP_ID	MORE_INFO
154244 (2002 KL6)	2016-08-16 14:14-14:26	2016B994	T	SBD,Prism,Open,0.8x15	sbd_20160816_141419	[T] [P] [W] [Q]
A0Star HD 3266	2016-08-16 14:31-14:34	2016B994	S	SBD,Prism,Open,0.8x15	sbd_20160816_143145	[T] [P] [W] [Q]
calibration	2016-08-16 14:35-14:37	2016B994	C	SBD,Prism,Open,0.8x15	sbd_20160816_143554	[T] [P] [W] [Q]
HD_7215	2016-08-16 14:43-14:45	2016B994	S	SBD,ShortXD,Open,0.5x15	sbd_20160816_144355	[T] [P] [W] [Q]
HD_3266	2016-08-16 14:48-14:49	2016B994	T	SBD,ShortXD,Open,0.5x15	sbd_20160816_144810	[T] [P] [W] [Q]
calibration	2016-08-16 14:51-14:52	2016B994	C	SBD,ShortXD,Open,0.5x15	sbd_20160816_145117	[T] [P] [W] [Q]
HD_6457	2016-08-16 14:58-15:02	2016B994	S	SBD,LXD_short,Open,0.3x15	sbd_20160816_145831	[T] [P] [W] [Q]
Uranus (799)	2016-08-16 15:18-15:23	2016B994	T	SBD,ShortXD,Open,0.3x15	sbd_20160816_151802	[T] [P] [W] [Q]
HD_6457	2016-08-16 15:28-15:34	2016B994	S	SBD,ShortXD,Open,0.3x15	sbd_20160816_152815	[T] [P] [W] [Q]
calibration	2016-08-16 15:36-15:37	2016B994	C	SBD,ShortXD,Open,0.3x15	sbd_20160816_153600	[T] [P] [W] [Q]

Include the following data with the download

[x] Related Standard Groups [x] Related Calibration Groups

[ ] IE Logs [ ] Weather Data [ ] Program Information

Download Go Back

Search Results Table – The search results provide 1 line for each image group, represented by the GROUP_ID. This group of images are the results of an observation with a specific target, and stable instrument configuration. Included with the download would be all the standard, star images, and calibration files. The Columns in the search table are:

- **Download Check-box** – The user would check this box to download the Image group.
- **NAME** – The name of the object from the NAME keyword.
- **DATE_TIME_OF_OBJ** - The UTC date and time of the observations. The format is "YY-MM-DD HH:MM HH:MM" and represents the DATE TIME_BEG TIME_END keywords.
- **PROGRAM_ID** – Display the PROGRAM_ID keyword the label file.
- **INST_SETUP** – Display the Instrument setup values from the search parameters page.
- **GROUP_ID** – Display the GROUP_ID. This keyword groups the individual images into this download group.
- **[T]** – More Info Target button. Pressing this button would bring up a tab or window with additional information on the target. ie
- Target Name, number of target images, standard name, number of images, etc. Provided as a .jpg to allow image or graph to be include.
- **[P]** – More info Program button. Pressing this button would bring up text tab with the observing program infromation. Source is the data product program_YYYYSNNN.txt file.
- **[W]** – More info Weather button. Pressing this button would bring up a tab or window that shows key graph of weather data for the UTC_DATE/PROGRAM_ID time period.
- **[Q]** – More info Quality button. Pressing this button would bring up a tab or window that shows quality assessment information.

include the following meta data with the download

[ ] Related Standard Groups – Selecting this will allow users to download related standard groups related to this observation.
[ ] Related Calibration Groups – Selecting this will allow users to download related calibration groups related to this observation.

[ ] ielogs – ielog data product for each UTC date.
[ ] weather data – weather data product for each UTC date.
[ ] program information – Program information date product.

Download - The user to select this button to start the download.
Go Back – This button would return to the search parameter screen.

Target Information Sample (.txt, .png)

Target Information for Obsgroup sbd_20170111_142618

Object name:	Jupiter (599)	[LS_NAME]
NAIFID:	599	
Object magnitude:	-2.0	[TCS_MAG]
RA:	13:22:52.95	[LS_RA]
Dec:	-07:17:45.0	[LS_DEC]
Coordinate System:	fk5	[LS_CS]
Equinox:	2000.0	[LS_EQ]
Proper Motion RA:	0.000000	[LS_PMRA]
Proper Motion Dec:	0.000000	[LS_PMDEC]
Proper Motion Epoch:	2000.00	[LS_EP]
Non-sidereal rate RA (Start):	0.003040	[LS_NSRA first file]
Non-sidereal rate Dec (Start):	-0.001070	[LS_NSDEC first file]
Date of Obs. UT (Start)	2017-01-11	[DATE_OBS first file]
Time of Obs. UT (Start)	14:26:18.336993	[TIME_OBS first file]
Time of Obs. UT (End)	15:46:53.516046	[TIME_OBS last file + ELAPTIME]
Hour Angle (Start)	-01:54:12.43	[TCS_HA first file]
Hour Angle (End)	-00:33:25.86	[TCS_HA last file + ELAPTIME]
Airmass (Start)	1.288	[TCS_AM first file]
Airmass (End)	1.136	[AM calc using TCS_HA last file + ELAPTIME]
Integration time (per image)	29.6544	[Seconds, ITIME x CO_ADDS]
Int. time [total A beam]	1215.83	[Seconds, Sum of A-beam ITIME x CO_ADDS]
Int. time [total B beam]	1215.83	[Seconds, Sum of B-beam ITIME x CO_ADDS]

ICM (Cartman) Instrument settings:

Cross-disperser	Lp	[XDROT]
Cross-disperser tilt	Lp4	[XDTILT]
Order-sorting filter	Lo	[OSF]
Lower Wavelength	3.1591000000	[XDWLLWR]
Upper Wavelength	3.4371000000	[XDWLUPPR]
Slit width	0.375	[SLIT]
Slit length	25	[DEKKER]
Slit position angle	296.00	[POSANGLE]
Moon proximity		
Elevation (range)	3.9 - 21.5	[Degrees, from Horizons]
Angular separation (range)	102.7 - 103.5	[Degrees, from Horizons]
Fraction illumination (range)	98.6 - 98.7	[Percent, from Horizons]
Offset to parallactic angle (range)		[POSANGLE - TCS_PA]

Weather

Seeing (range)	[Min to Max DIMM seeing values from IQUP during time of ObsGroup data files]
Humidity (range)	[Min to Max TCS_HUM from ObsGroup files]
Optical Depth (range)	[Min to Max TAU225 from ObsGroup files]
Wind Speed (range)	[Min to Max TCS_WMSP from ObsGroup files]

Planet Orbit Geometry (for Solar System Objects only)

Heliocentric distance (at Start time)	[Single value, at ObsGroup Start time, from JPL Horizons, Heliocentric Range, unit AU]
Observer distance (at Start time)	[Single value, at ObsGroup Start time, from JPL Horizons, Observer Range, unit AU]
Solar Phase angle (at Start time)	[Single value, at ObsGroup Start time, from JPL Horizons, Sun-Target-Observer ~PHASE angle, unit Degrees]

Planetocentric Geometry (for Solar System Objects only)

Observer sub-long (range)	[Planetocentric longitude values at Start and End times of ObsGroup, from JPL Horizons, from selection “Observer sub-lon & sub-lat”]
Observer sub-lat (at Start time)	[Planetocentric latitude at start time of ObsGroup, from JPL Horizons, from selection “Observer sub-lon & sub-lat”]
Sun sub-long (range)	[Planetocentric longitude values at Start and End times of ObsGroup, from JPL Horizons, from selection “Sun sub-longitude & sub-latitude”]
Sun sub-lat (at Start time)	[Planetocentric latitude at start time of ObsGroup, from JPL Horizons, from selection “Sun sub-longitude & sub-latitude”]
Target angular diameter (at Start time)	[Angular diameter at start time of ObsGroup from JPL Horizons, from selection “Target angular diameter”]
NP position angle (at Start time)	[Position angle of Planetocentric North Pole at start time sof ObsGroup, from JPL Horizons, from selection “North Pole position angle & distance”]
NP distance (at Start time)	[Distance of Planetocentric North Pole from center of disk at start time sof ObsGroup, from JPL Horizons, from selection “North Pole position angle & distance”]

Suggestion for .PNG

Pointing record (for Solar System objects only)[Image (.png) showing offset between TCS_RA and TCS_DEC, and EPHEMERIS RA and DEC generated from JPL Horizons, with one point plotted for every file in ObsGroup]

Program Information Sample (.txt)

```
#
# Program information file
#
PROGRAM_ID          2016B002
PROGRAM_TITLE       Finding ancient lava flows: Continuing the effort to inventory basaltic asteroids in the main asteroid belt
PROGRAM_INV1        Paul Hardersen
PROGRAM_INV2        Vishnu Reddy
PROGRAM_INV3        Gordon Gartrelle
PROGRAM_INV4        Savan Becker
PROGRAM_INV5        Matt Nowinski
PROGRAM_SCICAT      solar system
PROGRAM_ABSTRACT_BEG
Determining the abundance, distribution, and extent of igneous asteroids in the main asteroid belt is fundamental to understanding the physical and thermal conditions in the inner regions of the solar system during the formation epoch. Better understanding the full range of conditions at this time will also increase our understanding of general planetary system formation processes. The two proposed solar system heating mechanisms, 26Al radiogenic heating and T Tauri induction heating, predict different spatial heating trends that are potentially distinguishable through proper testing [Herbert et al., 1991; Grimm and McSween, 1991]. However, no rigorous inventory of the igneous asteroids in the main asteroid belt has been conducted to allow this testing to occur.

Therefore, we propose to rigorously inventory the basaltic asteroids throughout the main asteroid belt as the first step in the overall effort to better understand the igneous asteroid population. The two primary basaltic asteroid populations currently include those asteroids thought to derive directly from the surface of [4] Vesta [i.e., Vestoids] and basaltic asteroids in the outer main belt not associated with [4] Vesta. Using a sample of potential basaltic asteroids identified in Mainzer et al. [2012], we will use the NASA IRTF/SpeX spectrograph in prism mode [0.7-2.5-microns] to observe 47 Vp-type asteroids over six full nights. We require SNR = 100 to obtain high-quality NIR spectra. Our objectives include: 1] derive an average near-infrared [NIR] reflectance spectrum for each asteroid, 2] verify the presence of the two main pyroxene absorption features in each NIR spectrum, 3] derive band centers, band areas, and Band Area Ratios [BARs], 4] use pyroxene chemistry calibrations from Gaffey et al. [2002] and Reddy et al. [2011] to estimate surface pyroxene chemistries, and 5] attempt to match each Vp-type asteroid with one of the basaltic achondrite meteorites [aka: Howardite-Eucrite-Diogenite [HED] meteorites].
PROGRAM_ABSTRACT_END
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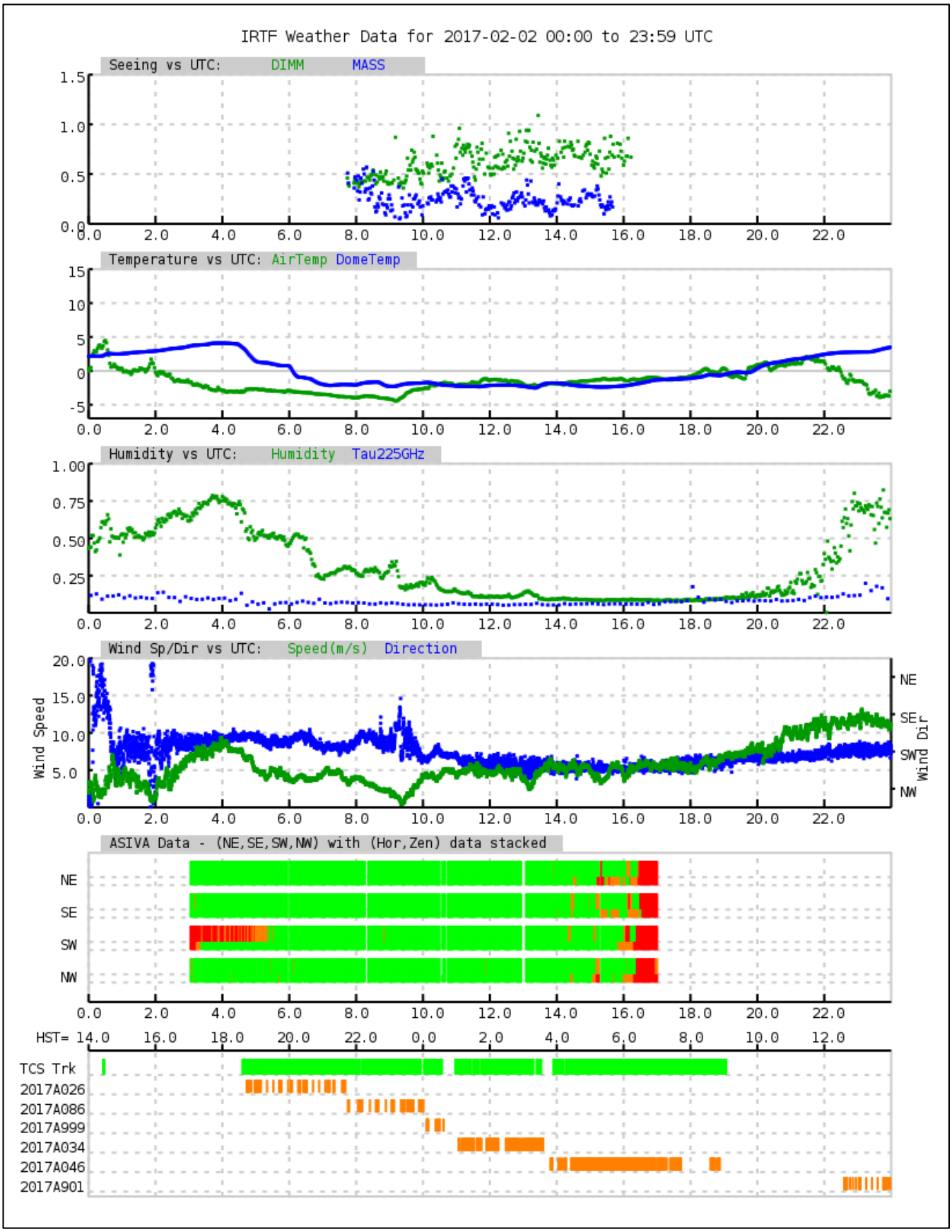
Weather Info Sample (.png)



Quality Assessment Sample (.txt, .png)

Quality Assessment information is not available.

Other suggestions.

1. Web page to allow user to brown and search Program_ID.txt information