SDC PDS Review
Post-Pluto Data:
January 2015 to October 2016

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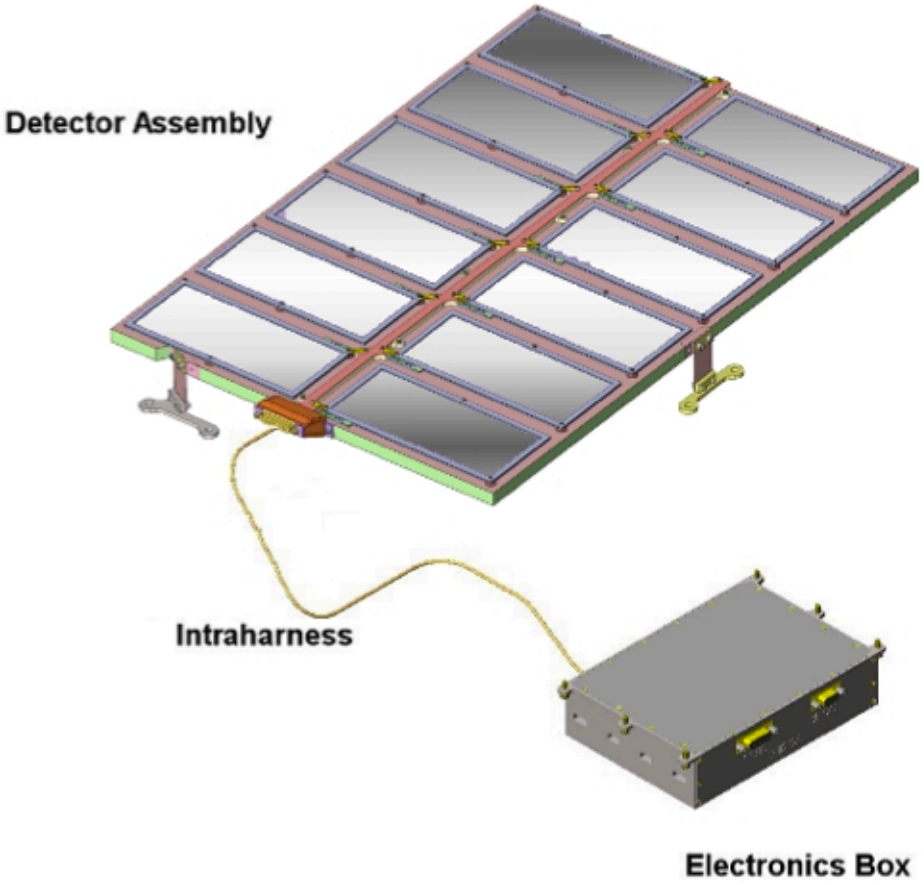
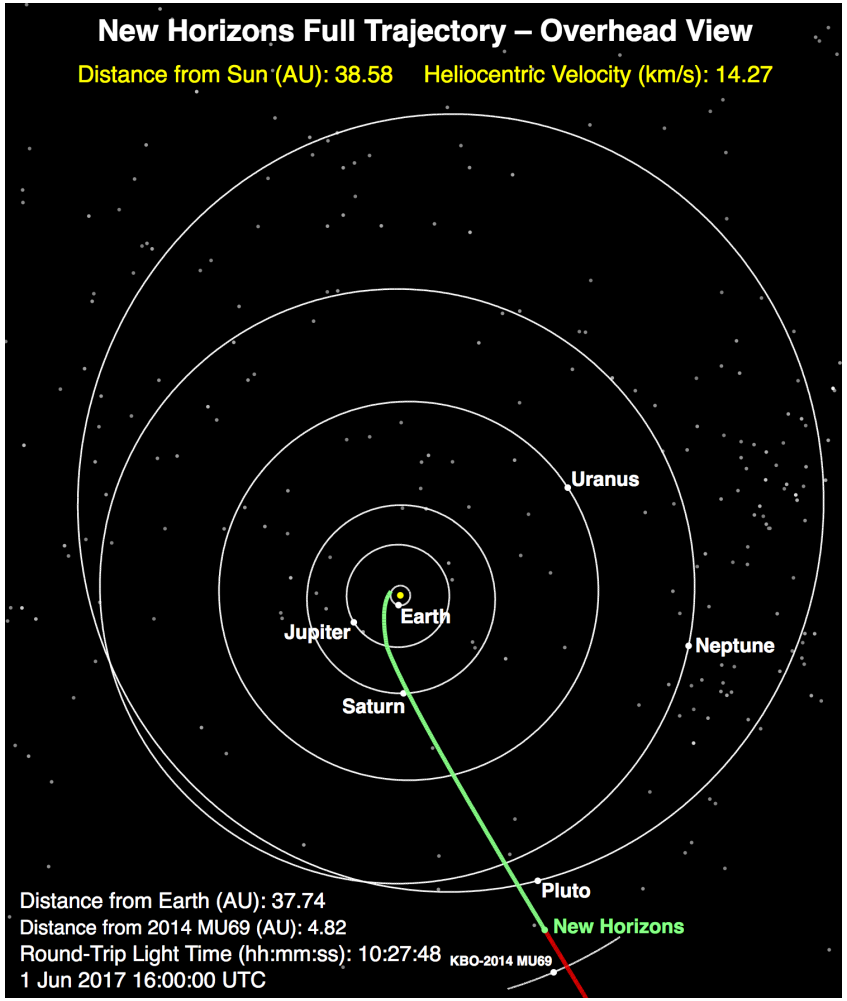
SDC Instrument



SDC instrument:

- 14 detectors: 12 science (with 1 defunct), 2 reference
- electronics box for signal processing, telemetry/commands

Previous & Current Releases



SDC launch, jupiter, and cruise datasets cover 1/2006 to 7/2014, Earth to approximately the orbit of Neptune

Three main data periods previously released by SDC:

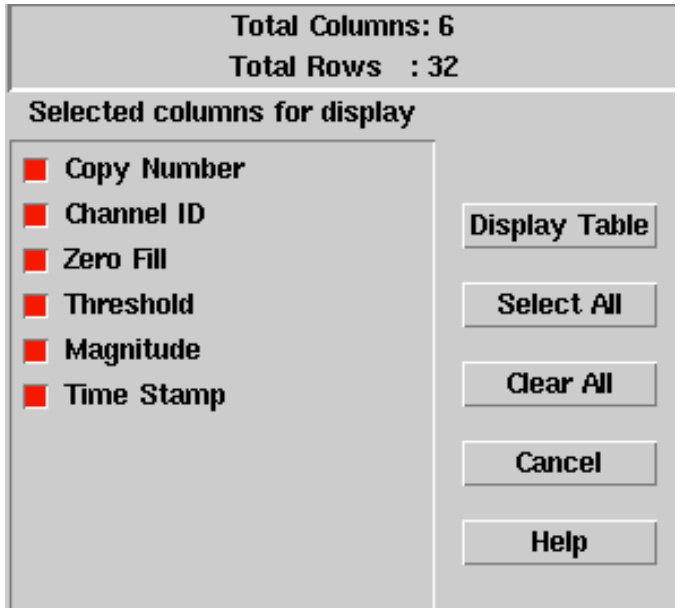
- Launch: March 2006 – Dec 2006, mainly testing and checkout of instrument
- Jupiter: Dec 2006 – June 2007, small chunk of data taken post-Jupiter fly-by (note SDC was not on during close approach of Jupiter)
- Pluto-cruise: June 2007 – July 2014, main period of scientific data collection by SDC between the orbits of Jupiter and Pluto

Current dataset:

- Pluto Encounter: Jan 2015 – Oct 2016, Pluto approach, encounter, post-encounter

SDC Raw Data

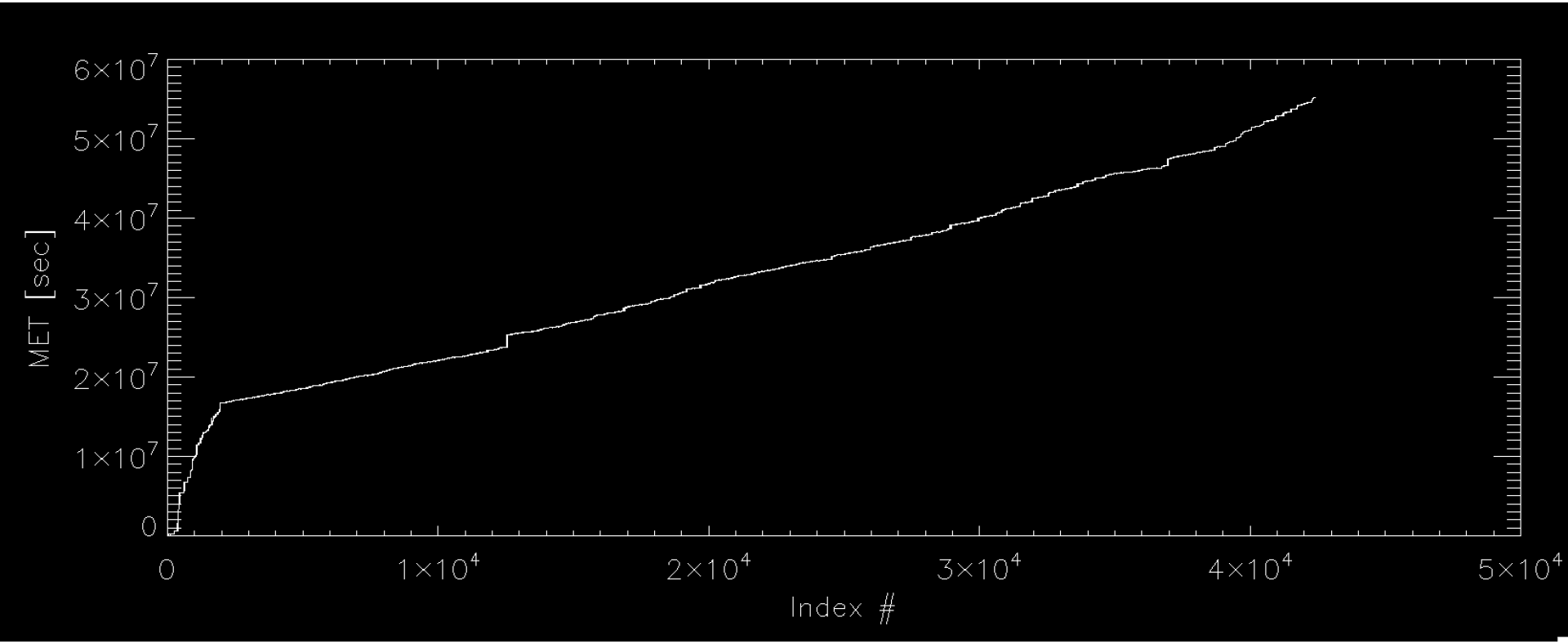
Index	Extension	Type	Dimension	View
0	Primary	Image	0	Header | Image | Table
1	DATA	Binary	6 cols X 32 rows	Header | Hist | Plot | All | Select
2	HOUSEKEEPING_SDC	Binary	9 cols X 0 rows	Header | Hist | Plot | All | Select
3	HOUSEKEEPING_0X004	Binary	37 cols X 1 rows	Header | Hist | Plot | All | Select
4	HOUSEKEEPING_0X00D	Binary	8 cols X 1 rows	Header | Hist | Plot | All | Select
5	HOUSEKEEPING_0X00A	Binary	5 cols X 1 rows	Header | Hist | Plot | All | Select
6	THRUSTERS	Binary	28 cols X 0 rows	Header | Hist | Plot | All | Select



Includes SDC raw scientific data, SDC housekeeping (engineering telemetry), New Horizons spacecraft housekeeping (0x004, 0x00D, 0x00A), and New Horizons thruster firing fata

The SDC raw scientific data includes channel (detector) number, data threshold, data magnitude, and time stamp

SDC Raw Data

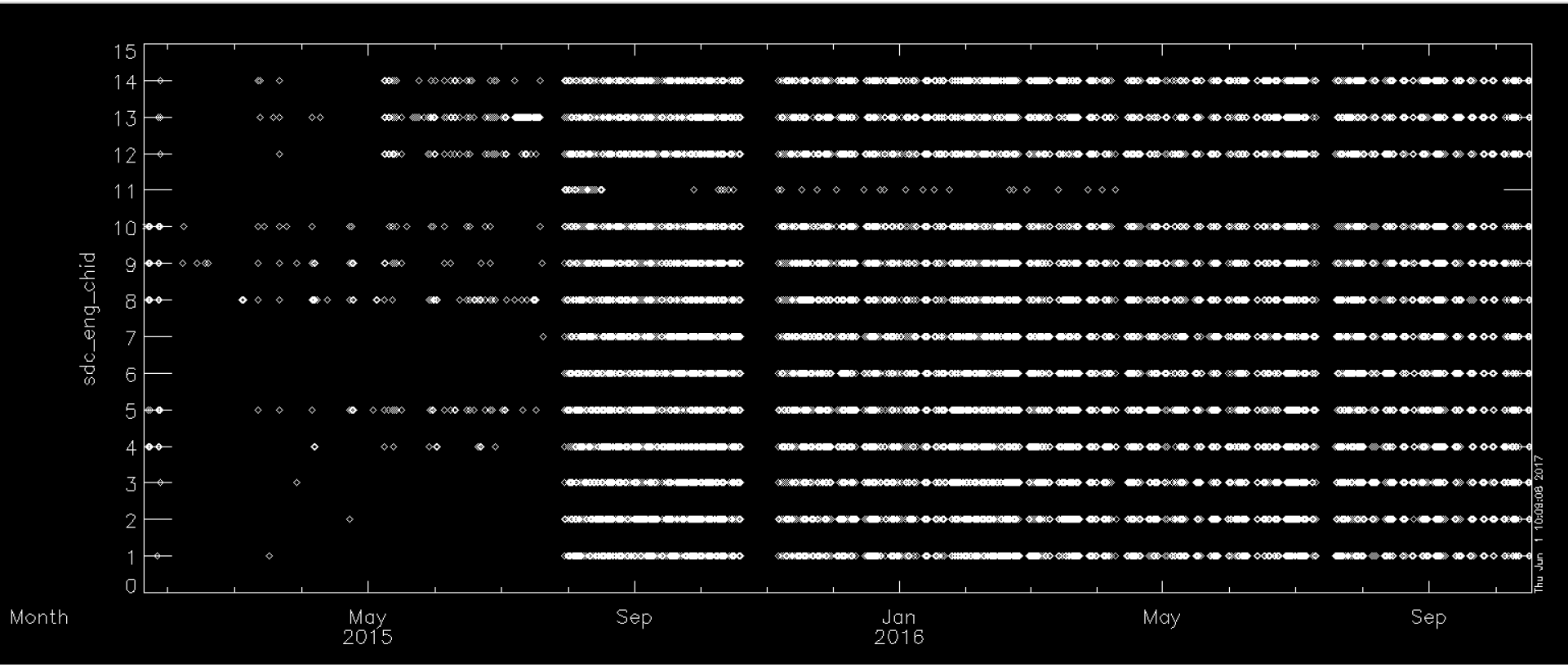


Plot of Mission Elapsed Time vs. entry looks good

Total number of events: 24,240

Time period covers: Jan 17, 2015 – Oct 17, 2016

SDC Raw Data

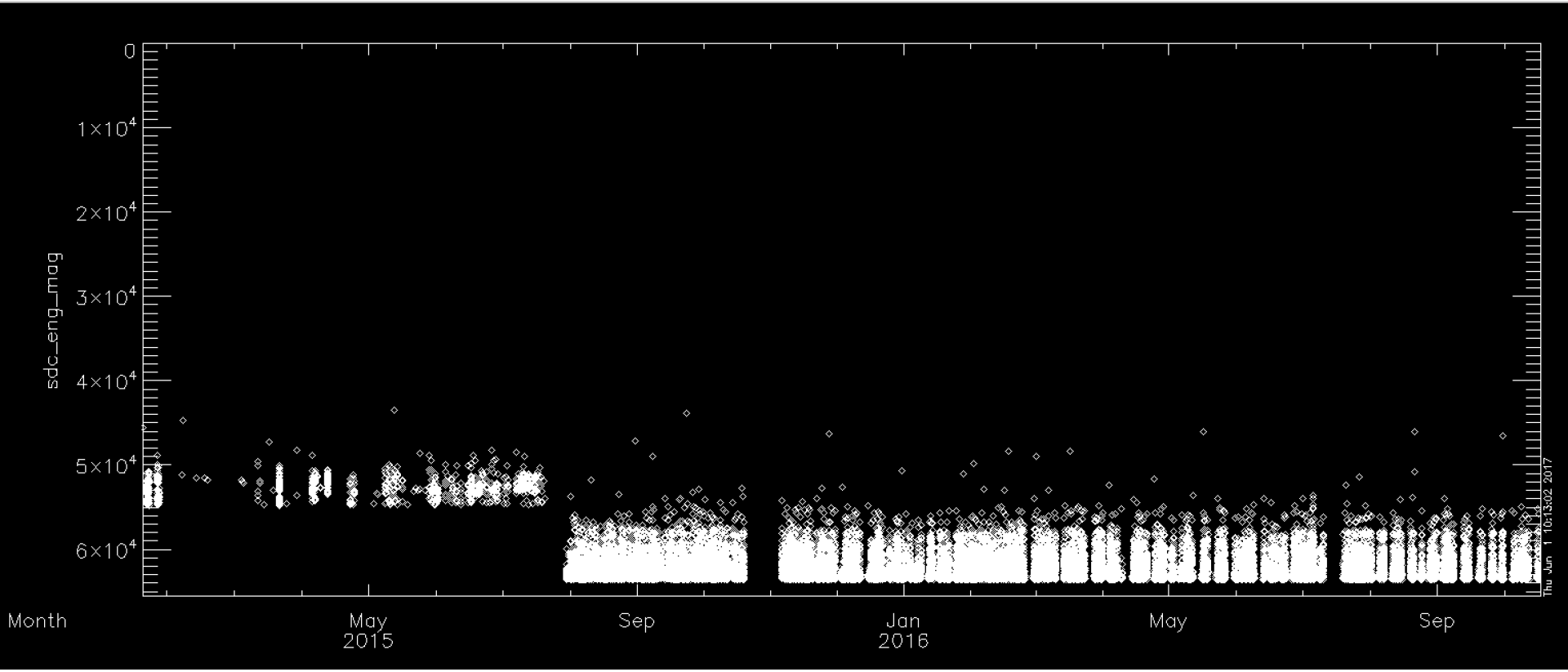


Channel ID# versus Time looks good

Total number of events: 24,240

Time period covers: Jan 17, 2015 – Oct 17, 2016

SDC Raw Data

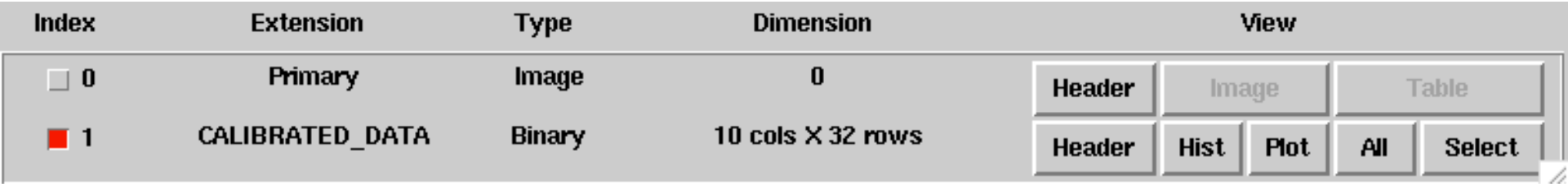


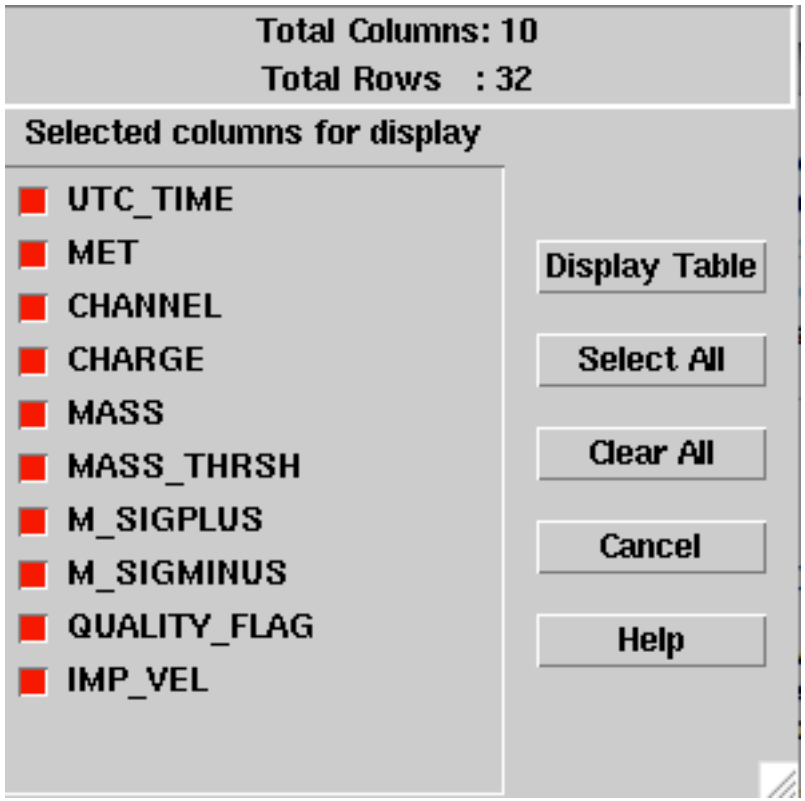
Magnitude versus Time looks good – note threshold change post Pluto encounter

Total number of events: 24,240

Time period covers: Jan 17, 2015 – Oct 17, 2016

SDC Calibrated Data

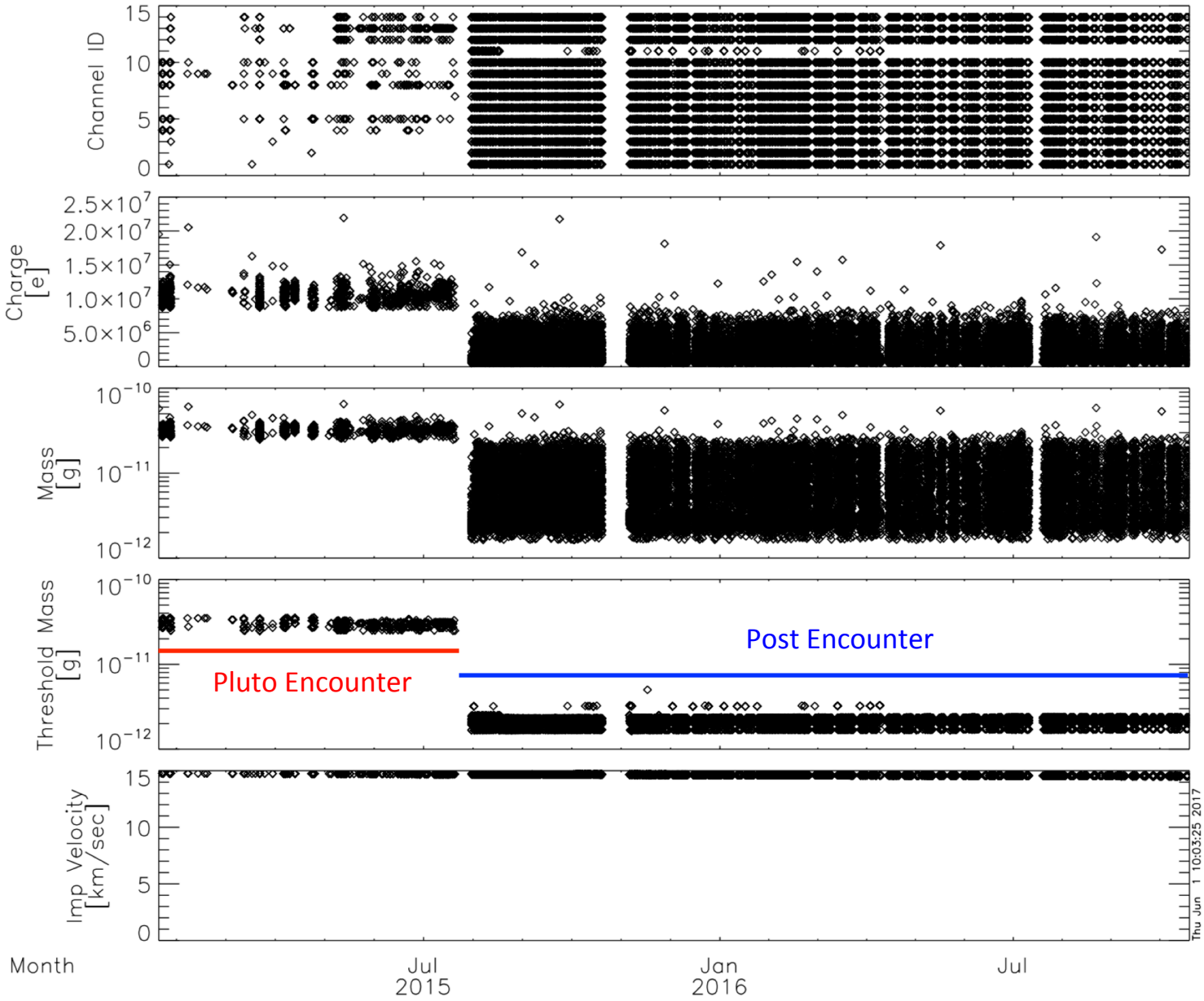




Includes SDC calibrated scientific data

The SDC calibrated scientific data includes time, channel, charge, mass, mass threshold, error bars, quality flag, and theoretical SDC-dust relative impact velocity

SDC Calibrated Data



Textual Edits: nh-p-sdc-[2,3]-pluto-v2

- None noted.

Completeness:

- Each time period (launch, jupiter, cruise, pluto) has a complete set of files and documentation
- Adequate completeness of each data record (i.e., one dust hit)

Intelligibility:

- Documentation is adequate and straightforward
- SDC data are intelligibly formatted through FITS files, both raw and calibrated
- Metadata are straightforward through ASCII implementation

Interpretability:

- Given the relatively simple nature of SDC operations, the data are straightforwardly interpretable; no issues noted here

No liens noted.