



UV Astronomy 2014-2020

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Goals

- Lessons learned from TAUUVEX.
- Student built satellites.
- UV Astronomy in the next decade.



TAUVEX

- Set of three UV imagers with 20 cm mirrors.
 - First proposed in late 1970s.
- Planned for Spectrum X Gamma
 - Indefinitely postponed.
- Proposed for ISRO launch in 2001.



TAUVEX Timeline

- Then ISRO Chairman came to Israel.
- Science Minister went to India.
 - Signed on Dec. 25, 2003.
 - Intended for 2005 launch.
- Progressive delays.
 - Original proponents retired/left.
- Mounted onto spacecraft in Nov. 2009.
- Taken off spacecraft in Dec. 2009.



Current Status

- Promised another launch by ISRO.
 - Delays in communications between ISA and ISRO.
 - Delays in ISRO launches.
- Status highly uncertain.



ISRO Launch Opportunities

- Two types of launches actively encouraged.
 - Commercial launches.
 - Student launches.
- Small satellite slots effectively booked for the next 3 years.
- Free launches and support for science likely to be minimal.



Student options

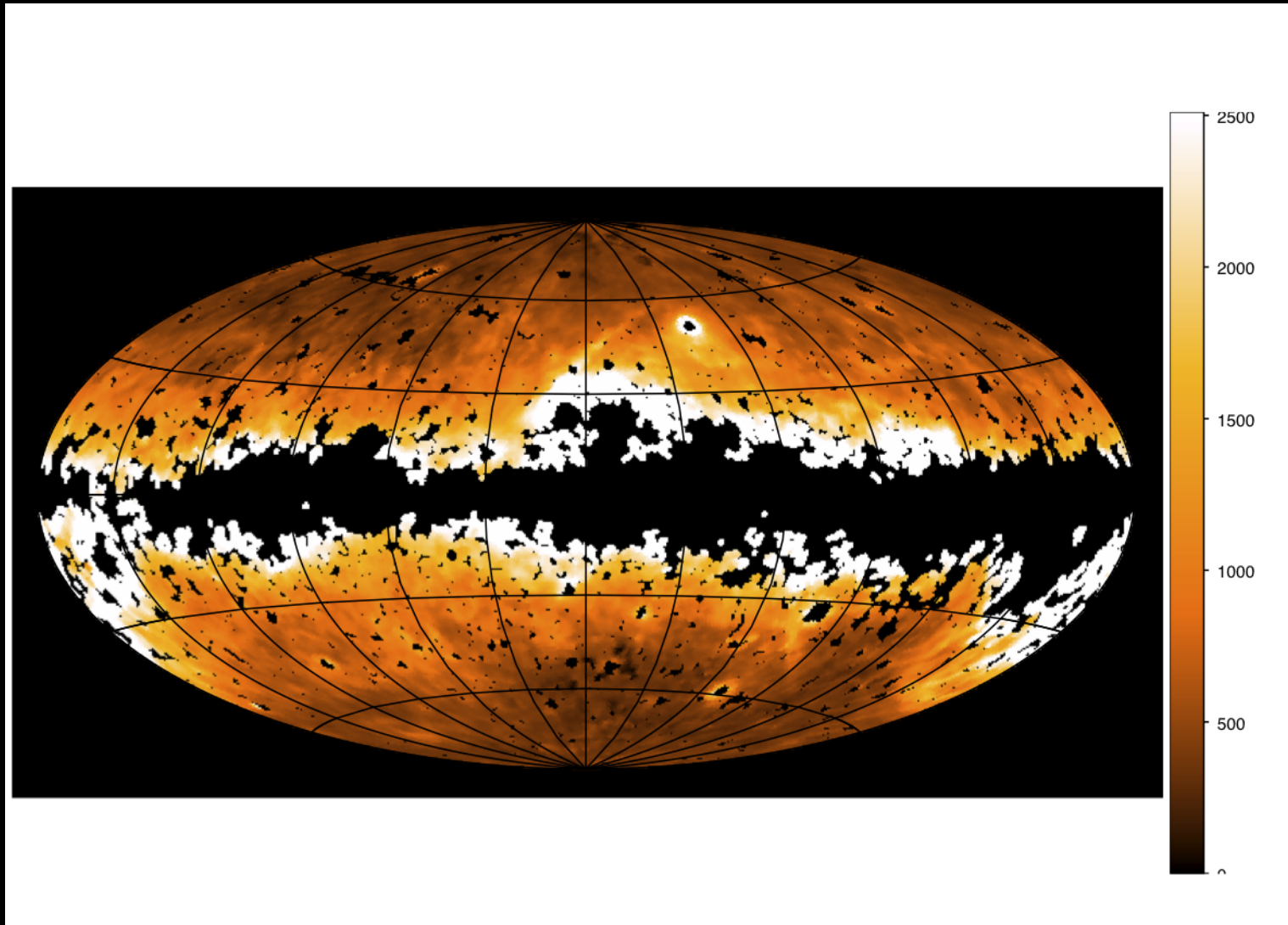
- First was AnuSat.
 - Ham radio beacon.
- Studsat.
 - Group of engineering colleges.
 - To be launched with the next PSLV.
- Pratham: IIT (Bombay) – upper atmosphere work.
- Jugnu: IIT (Kanpur) – remote sensing.



- GALEX status
 - FUV power supply has failed.
 - Carrying on with NUV.
- Completed most of all-sky survey.
 - AIS fields with 100 – 300 second exposure.
- Excludes Galactic plane and other bright regions.
 - Magellanic Clouds.
 - Orion.



Diffuse sky with GALEX





COS/STIS

- High resolution spectroscopy (1200 – 3200 Å).
 - R from 2,000 – 40,000.



SPEAR/FIMS

- UCB/Korea collaboration.
- Two imaging spectrographs.
 - Spectral images of sky.
 - EUV detector did not work properly.



- Echelle spectrograph
 - $R = 20,000$
- Long Slit Spectrograph.
 - $R = 600 - 1000$.



ASTROSAT/UVIT

- FUV, NUV, optical detectors.
 - Spatial resolution 1.5”.
- Prospective launch date in 2012.
- Data are essentially proprietary.



Possibilities for Small Satellites

- No survey of the Galactic plane.
 - Too bright for both GALEX and UVIT.