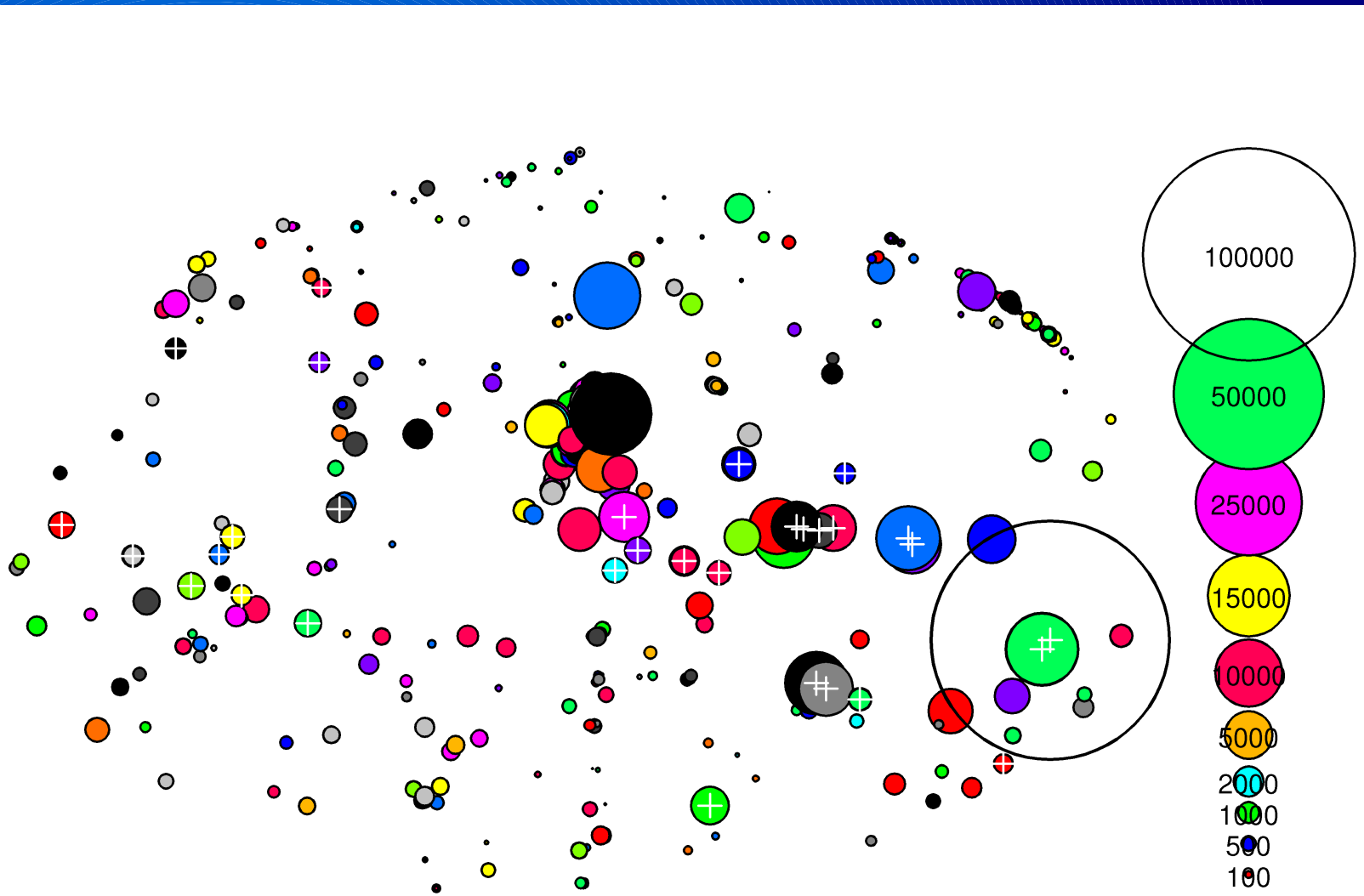
My Projects

Jayant Murthy

Diffuse UV Observations

- Diffuse UV background is due to:
  - Instrumental dark noise.
  - Airglow.
  - Zodiacal Light.
  - Unresolved stars.
  - Dust scattered starlight.
  - Extragalactic light.
- Review paper under thought!

Dust Scattered Starlight



Coalsack

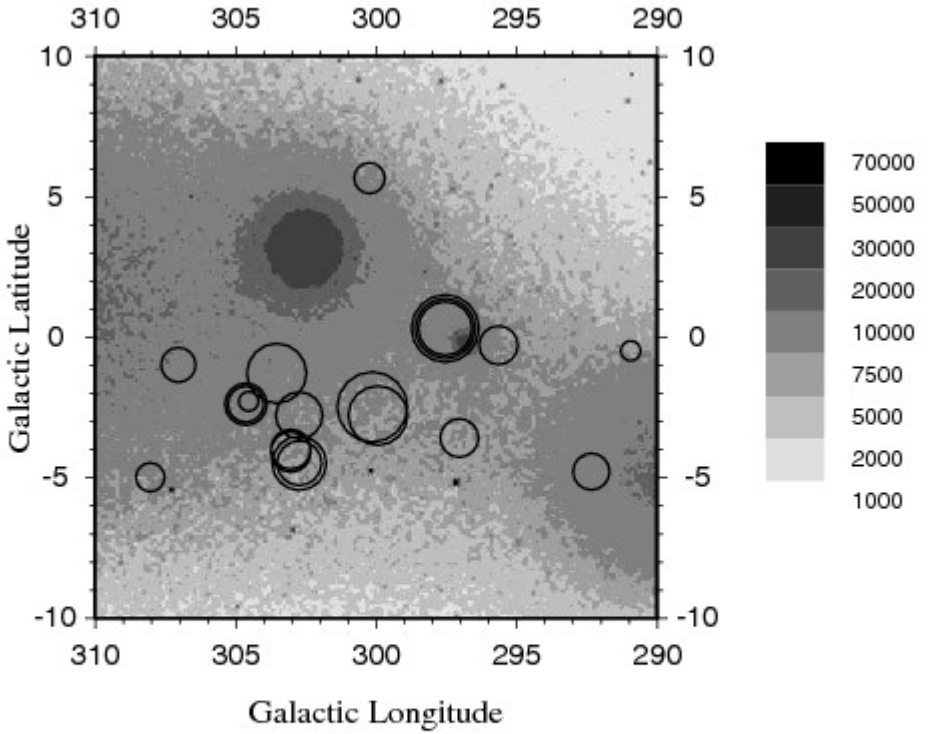


Fig. 4.— The scattered light predicted by our model with $a = 0.28$ and $g = 0.61$ is shown in figure in units of photons cm^{-2} s^{-1} sr^{-1} $Å^{-1}$. The observed locations are overplotted as circles whose radii are proportional to their intensity at 1114 Å.

Coalsack

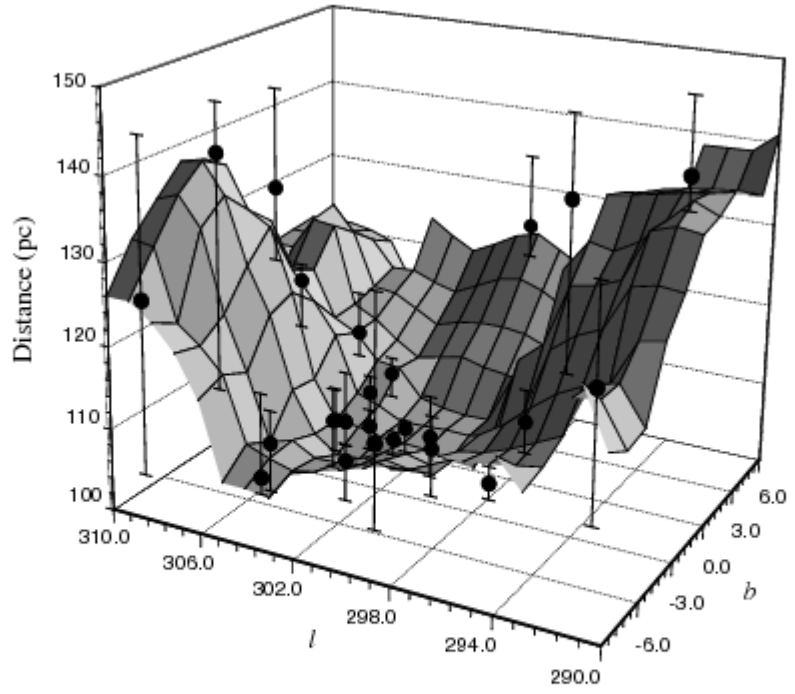


Fig. 3.— Best fit distance of the more distant of the two H I clouds (derived from the weighted average intensities of 2A2 and 1B1 bands at 1114 Å, assuming that a and g remain constant throughout the region) is shown as dark circles with error bars showing the range of allowed distances. The interpolated surface fit for the region is also overplotted.

Optical Constants

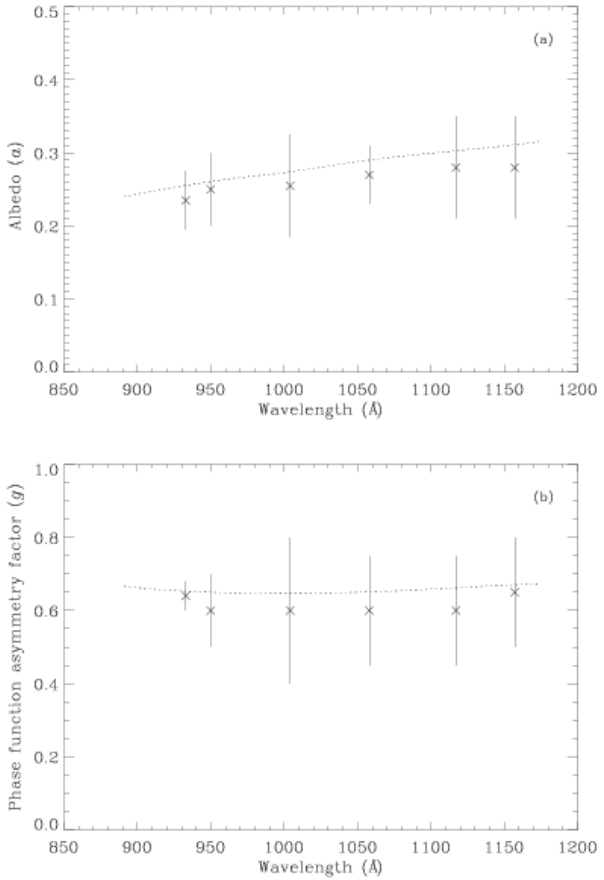


Fig. 8.— The spectral variation in the albedo a and in the phase function asymmetry factor g are plotted in (a) and (b), respectively. The theoretical prediction of Weingartner & Draine (2001) is overplotted as dotted line.

Future Work

- Sujatha, Abhay, Anantha
  - Galex background data (Sujatha).
  - LMC FUSE observations (Anantha).
- Improved modeling including IR emission.
  - Abhay

TAUVEX

TAUVEX: UV Astronomy Mission

http://tauvex.iiap.res.in/

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• OBSERVATIONS OF THE UNIVERSE •
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**A Collaboration between
the Indian Institute of Astrophysics
and Tel Aviv University**

247 DAYS LEFT FOR TAUVEX LAUNCH

Tauvex Flight Model at El-Op Clean Room

About Tauvex

TAUVEX is an Indo-Israeli Ultraviolet Imaging Experiment that will image large parts of the sky in the wavelength region between 1400 and 3200 Å. The instrument consists of three equivalent 20-cm UV imaging telescopes with a choice of filters for each telescope. Each telescope has a field of view of about 54' and a spatial resolution of about 6" to 10", depending on the wavelength. TAUVEX will be launched into a geostationary orbit as part of ISRO's GSAT-4 mission in 2007.

TAUVEX is a collaborative effort between the Indian Institute of Astrophysics (P.I.: Jayant Murthy) and Tel Aviv University (P.I.: Noah Brosch) with the scientific data open to all Indian and Israeli scientists. Further information may be obtained from the P.I.s or by writing to tauvex@iiap.res.in.

Done

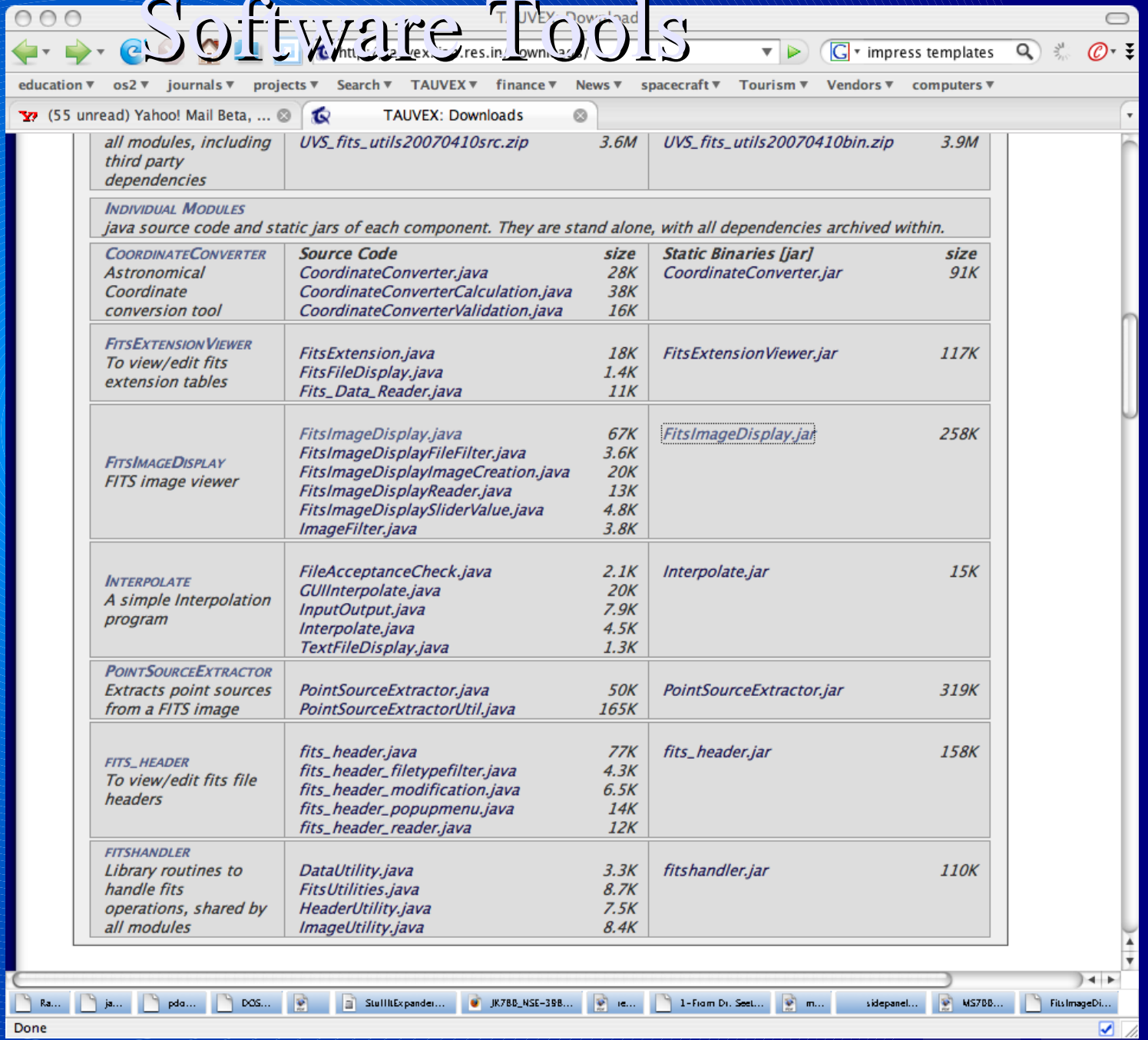
TAUVEX Status

- Launch by end of the year.
- TAUVEX expected in November.
- Final preparations for proposals and data sharing.
- Check web pages for documents and tools.

TAUVEX Personnel

- Rekhesh Mohan
- Margarita Safonova
- Gopakumar P.
- M. Fayaz.
- V. Sharan.
- Geetha L.
- Sowjanya.

Software Tools



all modules, including third party dependencies	*UVS_fits_utils20070410src.zip*	*3.6M*	*UVS_fits_utils20070410bin.zip*	*3.9M*
INDIVIDUAL MODULES *java source code and static jars of each component. They are stand alone, with all dependencies archived within.*				
COORDINATECONVERTER *Astronomical Coordinate conversion tool*	***Source Code*** *CoordinateConverter.java* *CoordinateConverterCalculation.java* *CoordinateConverterValidation.java*	***size*** *28K* *38K* *16K*	***Static Binaries [jar]*** *CoordinateConverter.jar*	***size*** *91K*
FITSEXTENSIONVIEWER *To view/edit fits extension tables*	*FitsExtension.java* *FitsFileDisplay.java* *Fits_Data_Reader.java*	*18K* *1.4K* *11K*	*FitsExtensionViewer.jar*	*117K*
FITSIMAGEDISPLAY *FITS image viewer*	*FitsImageDisplay.java* *FitsImageDisplayFileFilter.java* *FitsImageDisplayImageCreation.java* *FitsImageDisplayReader.java* *FitsImageDisplaySliderValue.java* *ImageFilter.java*	*67K* *3.6K* *20K* *13K* *4.8K* *3.8K*	*FitsImageDisplay.jar*	*258K*
INTERPOLATE *A simple Interpolation program*	*FileAcceptanceCheck.java* *GUIInterpolate.java* *InputOutput.java* *Interpolate.java* *TextFileDisplay.java*	*2.1K* *20K* *7.9K* *4.5K* *1.3K*	*Interpolate.jar*	*15K*
POINTSOURCEEXTRACTOR *Extracts point sources from a FITS image*	*PointSourceExtractor.java* *PointSourceExtractorUtil.java*	*50K* *165K*	*PointSourceExtractor.jar*	*319K*
FITS_HEADER *To view/edit fits file headers*	*fits_header.java* *fits_header_filetypefilter.java* *fits_header_modification.java* *fits_header_popupmenu.java* *fits_header_reader.java*	*77K* *4.3K* *6.5K* *14K* *12K*	*fits_header.jar*	*158K*
FITSHANDLER *Library routines to handle fits operations, shared by all modules*	*DataUtility.java* *FitsUtilities.java* *HeaderUtility.java* *ImageUtility.java*	*3.3K* *8.7K* *7.5K* *8.4K*	*fitshandler.jar*	*110K*