



# UVIT safety check tools

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# UVIT Bright Source Warning Tool

Gives a list of all the bright visible stars in the field of a given target.  
Link: <https://uvit.iap.res.in/Software/bswt>

[Home](#) [Science](#) [Instrument](#) [Calibration](#) [Observing](#) [Publications](#) [Software](#) [Downloads](#) [Intranet](#)

## Bright Source Warning Tool

v 2.0.0

Field Coordinates

Coordinate Type ☒ Equatorial (J2000)  
☐ Galactic

Eq. Coordinates

Source Name

Primary Instrument

**Software**

Obs Planning: VIS

Obs Planning: UV

► Exposure Calculator

▼ **Bright Source Warning Tool**

BSWT Help

► Timestamp Conversion

**Observing**

Preparations

Proposal Submission

Planning Tools

Data Status

Data Archive

**Astrosat**

Astrosat Website (ISRO)

Astrosat Website (IUCAA)

Science Support

Astrosat at ISSDC

**Outreach**

Programming: V. Smriti, N. Sindhu, Anand Maltrey, Yuvraj Harsha, Annapurni  
Web Interface: Rekshesh Mohan

# UVIT Bright Source Warning Tool

[Home](#) [Science](#) [Instrument](#) [Calibration](#) [Observing](#) [Publications](#) [Software](#) [Downloads](#) [Intranet](#)

## Bright Source Warning Tool

v 2.0.0

**Input Values**

Src Coords (RA, Dec)	(19:58:21.67, 35:12:5.76) deg
Primary Instrument	UVIT

**Output**

RA:19:58:21.67 , DEC:35:12:5.76  
ra and dec in decimal:RA-->299.590302 DEC-->35.201599

299.24817	35.13049	11.256	1.119
299.76657	35.20945	10.014	0.161
299.31058	35.10326	10.704	1.345
299.91739	35.21311	11.639	0.544
299.66202	35.23968	11.568	0.228
299.37253	35.06476	11.195	0.482
299.34702	35.03967	11.566	0.321
299.36551	35.46247	12.061	0.368
299.34555	34.93555	11.829	0.149
299.56479	34.87552	11.018	0.432
299.77750	34.94608	12.015	0.251
299.28195	35.11315	11.927	0.962
299.58847	35.29081	10.643	0.399
299.34161	35.41313	12.163	0.468
299.78775	35.03084	11.763	0.390
299.62601	35.16512	11.392	0.903
299.47623	34.97052	11.308	0.142
299.52621	35.37974	9.084	0.009
299.73602	35.36957	11.085	1.410
299.64911	35.52013	12.148	0.404
299.35052	35.18059	12.636	0.314
299.66580	34.99330	11.073	0.306
299.30551	35.03140	7.271	0.424
299.70609	35.35433	9.548	1.246
299.59033	35.20161	8.909	0.609
299.65372	34.95538	11.115	0.347
299.71518	35.49776	6.998	0.021
299.51785	35.47624	12.614	-0.216
299.45139	35.03563	9.928	0.218
299.64523	35.45391	12.464	0.133
299.89392	35.03115	11.253	0.419
299.31882	35.41859	11.668	1.131
299.47348	35.29892	11.962	0.363
299.59018	35.21607	10.033	0.519
299.72936	35.34202	11.324	0.678

**Software**

Obs Planning: VIS  
Obs Planning: UV

► Exposure Calculator

► **Bright Source Warning Tool**

► BSWT Help

► Timestamp Conversion

**Observing**

Preparations  
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**Astrosat**

Astrosat Website (ISRO)  
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**Outreach**

Astrosat at ASI-POEC  
Picture of the Month  
Astrosat on Facebook

299.43646	35.20876	10.869	0.111
299.27997	35.17303	9.728	0.155
299.71710	35.10518	9.539	0.232
299.98071	35.21306	12.492	0.162
299.66150	35.06923	8.853	-0.034
299.44580	35.13369	11.279	0.434

Safe Count limit for FUV: 1500  
Safe Count limit for NUV: 1500

FUVCaF2-1  
FUVCaF2-1 : Field Is NOT SAFE For Observation ~ ~

FUVCaF2-2  
FUVCaF2-2 : Field Is NOT SAFE For Observation ~ ~

FUVBaF2  
FUVBaF2 : Field Is NOT SAFE For Observation ~ ~

FUVSapphire  
FUVSapphire : Field Is NOT SAFE For Observation ~ ~

FUVSsilica  
FUVSsilica : Field Is SAFE For Observations, provided no GALEX Bright source  
Total Counts: 2188.337128

NUVSilica  
NUVSilica : Field Is NOT SAFE For Observation ~ ~

NUVB4  
NUVB4 : Field Is NOT SAFE For Observation ~ ~

NUVB13  
NUVB13 : Field Is NOT SAFE For Observation ~ ~

NUVB15  
NUVB15 : Field Is NOT SAFE For Observation ~ ~

NUVN2  
NUVN2 : Field Is NOT SAFE For Observation ~ ~

SEARCHING FOR BRIGHT SOURCES in GALEX GR7

No GALEX FUV Bright stars in the field

No GALEX NUV Bright stars in the field

Download Output [TXT] [PDF]

Return to User Inputs

# UVIT VIS/FUV/NUV Filter Checking Tool



- To Check whether a field can be safely observed with UVIT VIS/FUV/NUV filters.
- The VIS channel is primarily used for the spacecraft tracking.
- Output of VIS filter checking tools is mandatory for UVIT observations.
- Link to filter checking tools: <https://github.com/prajwel/canuvit#readme>
- >> pip install canuvit
- >> canuvit -h



# UVIT VIS/FUV/NUV Filter Checking Tool



- To Check whether a field can be safely observed with UVIT VIS/FUV/NUV filters.
- The VIS channel is primarily used for the spacecraft tracking.
- Output of VIS filter checking tools is mandatory for UVIT observations.
- Link to filter checking tools: <https://github.com/prajwel/canuvit#readme>
- >> pip install canuvit
- >> canuvit -h

```
divyarawat@sysadmin-OptiPlex-5050:~$ canuvit -h
Usage: canuvit [OPTIONS]

Program to check if a given coordinate can be safely observed using UVIT.

Example usage:
canuvit -r "13:12:14" -d "-14:15:13"

Options:
  --all                Check safety for all filters. [default:
                        True]
  --vis                Check safety for only visible filters.
  --uv                Check safety for only UV filters.
  -r, --ra RA          Right ascension of the coordinate. Format:
                        hh:mm:ss[.ss] e.g. "00:54:53.45" [required]
  -d, --dec DEC        Declination of the coordinate. Format:
                        [-]dd:mm:ss[.ss] e.g. "-37:41:03.23".
                        [required]
  -i, --instrument [uvit|sxt|czi|laxpc]
                        Instrument to check for. [default: uvit]
  -v, --verbose        Increase output verbosity.
  --version            Show the version and exit.
  -h, --help           Show this message and exit.

divyarawat@sysadmin-OptiPlex-5050:~$
```

# UVIT VIS/FUV/NUV Filter Checking Tool

>> canuvit -r "source\_RA" -d "source\_Dec"

- "source\_RA" is Right ascension of the coordinate in hh:mm:ss[.ss]
- "source\_Dec" is Declination of the coordinate in [-]dd:mm:ss[.ss]

```
divyar@ravya-HP-Notebook:~$ canuvit -r "12:12:12" -d "12:12:12"
```

```
Payload: uvit, Coordinates: 12 12 12, 12 12 12
```

```
### VIS
```

ra_hms	dec_dms	mag	B-V	SpecType	VIS3	VIS2	VIS1	ND1	BK7
12:11:52.7568	+12:07:47.532	11.096	0.864	K1	1333.0	124.4	88.6	29.7	1624.9
12:12:22.944	+12:17:23.856	11.126	0.814	K0	1296.7	121.0	86.2	28.9	1580.6
12:11:35.016	+12:12:04.644	11.426	0.451	F5	1457.4	234.9	180.9	32.8	1915.2
12:11:01.656	+12:08:35.916	11.874	0.694	G5	754.3	89.1	69.2	16.8	950.9
12:11:11.5272	+12:03:14.04	12.177	0.322	F0	803.1	143.5	101.4	18.2	1061.7
12:12:05.5368	+12:19:09.768	12.268	0.787	K0	452.9	42.3	30.1	10.1	552.1

```
Safe filters: ['VIS3', 'VIS2', 'VIS1', 'ND1', 'BK7']
```

```
Downloading http://galax.stsci.edu/data/GR7/pipe/01-vsn/26011-GI6_001011_GUVICS011/d/01-main/0007-ing/07-try/GI6_001011_GUVICS011-xd-mcat.fits.gz  
|-----| 6.3M/6.3M (100.00%) 22s
```

```
FUV observations seem to be absent! Using M_fuv = M_nuv - 1.65.
```

```
Downloading http://galax.stsci.edu/data/GR7/pipe/01-vsn/26011-GI6_001011_GUVICS011/d/01-main/0007-ing/07-try/GI6_001011_GUVICS011-nd-int.fits.gz  
|-----| 16M/ 16M (100.00%) 41s
```

```
### NUV
```

sl_no	ra_hms	dec_dms	Mag	Mag_corrected	silica	b4	b13	b15	n2	
1	12:12:32.3946	+12:07:27.4144	19.32		19.32	1.86	0.41	0.50	0.14	0.10
2	12:11:11.6503	+12:03:14.7794	16.25		16.25	31.75	6.99	8.57	2.35	1.75
3	12:12:41.0882	+12:14:58.2679	16.15		16.15	34.66	7.63	9.36	2.56	1.91
4	12:12:15.3493	+12:29:18.1277	19.50		19.50	1.59	0.35	0.43	0.12	0.09
5	12:11:35.0116	+12:12:04.7063	16.47		16.47	25.93	5.70	7.00	1.92	1.43

```
Safe filters in NUV: ['Silica', 'NUV-grating', 'NUV-B4', 'NUV-B13', 'NUV-B15', 'NUV-N2']
```

# UVIT-VIS/FUV/NUV Filter Checking Tool

- The UVIT ~20 arc-minute field of view can have potential bright objects that can trigger a BOD.
- Due to offsets relative to UVIT : (1) SXT : primary instrument search 25 arc min around TOI and (2) LAXPC: primary instrument search for 28 arc min around TOI.

```
dlvyar@ravva-HP-Notebook:~$ canuvit -r "12:12:12" -d "12:12:12"
Payload: uvit, Coordinates: 12 12 12, 12 12 12

### VIS

ra_hms  dec_dms  mag      B-V      SpecType      VIS3      VIS2      VIS1      ND1      BK7
12:11:52.7568 +12:07:47.532  11.096  0.864  K1      1333.0  124.4  88.6  29.7  1624.9
12:12:22.944  +12:17:23.856  11.126  0.814  K0      1296.7  121.0  86.2  28.9  1580.6
12:11:35.016  +12:12:04.644  11.426  0.451  F5      1457.4  234.9  180.9  32.8  1915.2
12:11:01.656  +12:08:35.916  11.874  0.694  G5      754.3  89.1  69.2  16.8  950.9
12:11:11.5272 +12:03:14.04  12.177  0.322  F0      803.1  143.5  101.4  18.2  1061.7
12:12:05.5368 +12:19:09.768  12.268  0.787  K0      452.9  42.3  30.1  10.1  552.1

Safe filters: ['VIS3', 'VIS2', 'VIS1', 'ND1', 'BK7']

Downloading http://galex.stsci.edu/data/GR7/pipe/01-vsn/26011-GI6_001011_GUVICS011/d/01-main/0007-Img/07-try/GI6_001011_GUVICS011-xd-mcat.fits.gz
===== 6.3M/6.3M (100.00%) 22s

FUV observations seem to be absent! Using M_fuv = M_nuv - 1.65.
Downloading http://galex.stsci.edu/data/GR7/pipe/01-vsn/26011-GI6_001011_GUVICS011/d/01-main/0007-Img/07-try/GI6_001011_GUVICS011-nd-int.fits.gz
===== 16M/ 16M (100.00%) 41s

### NUV

sl_no  ra_hms      dec_dms      Mag  Mag_corrected  silica  b4  b13  b15  n2
-----
1 12:12:32.3946 +12:07:27.4144 19.32      19.32  1.86  0.41  0.50  0.14  0.10
2 12:11:11.6503 +12:03:14.7794 16.25      16.25  31.75  6.99  8.57  2.35  1.75
3 12:12:41.0882 +12:14:58.2679 16.15      16.15  34.66  7.63  9.36  2.56  1.91
4 12:12:15.3493 +12:29:18.1277 19.50      19.50  1.59  0.35  0.43  0.12  0.09
5 12:11:35.0116 +12:12:04.7063 16.47      16.47  25.93  5.70  7.00  1.92  1.43

Safe filters in NUV: ['Silica', 'NUV-grating', 'NUV-B4', 'NUV-B13', 'NUV-B15', 'NUV-N2']
```



# UVIT/VIS/FUV/NUV Filter Checking Tool

- The filters for which the count rates are lesser than 1500 in both NUV and FUV are safe for observations.

```
### FUV
sl_no    ra_hms    dec_dms    Mag    Mag_corrected    caf2    baf2    sapphire    silica
-----
1 12:12:32.3946 +12:07:27.4144 19.32    17.67    1.65    1.40    1.04    0.36
2 12:11:11.6503 +12:03:14.7794 16.25    14.60    28.17    23.94    17.75    6.20
3 12:12:41.0882 +12:14:58.2679 16.15    14.50    30.75    26.14    19.37    6.76
4 12:12:15.3493 +12:29:18.1277 19.50    17.85    1.41    1.20    0.89    0.31
5 12:11:35.0116 +12:12:04.7063 16.47    14.82    23.00    19.55    14.49    5.06

Safe filters in FUV: ['CaF2', 'FUV-grating', 'BaF2', 'Sapphire', 'Silica']

divyar@ravya-HP-Notebook:~$
divyar@ravya-HP-Notebook:~$ canuvt -r "19:15:11.6" -d "10:56:44" -i sxt
Payload: sxt, Coordinates: 19 15 11.6, 10 56 44

### VIS
ra_hms    dec_dms    mag    B-V    SpecType    VIS3    VIS2    VIS1    ND1    BK7
-----
19:16:46.296 +10:58:45.984 8.2    -0.16    B5    49400.0    16200.0    11000.0    1179.0    76200.0
19:16:46.428 +10:58:46.74 8.259    0.197    A7    34700.0    6816.4    3733.0    793.6    45000.0
19:14:02.4984 +10:38:44.988 8.3    -0.01    A0    40700.0    10500.0    4130.9    950.0    53800.0
19:14:02.6232 +10:38:44.592 8.342    0.296    A9    29700.0    5666.7    3636.5    676.0    39200.0
19:16:21.1008 +11:05:34.296 9.312    0.44    F5    10200.0    1646.2    1267.7    230.2    13400.0
19:15:08.1456 +10:34:31.476 9.355    0.524    F8    8744.7    1230.7    987.3    195.9    11300.0
19:16:00.924 +10:37:12.576 9.382    0.343    F1    10500.0    1882.5    1330.7    239.0    13900.0

Safe filters: ['ND1']

WARNING! there exists 2.0 pair of bright stars which are closer than
10.0 arcseconds!

0 Gaalex tiles found. Gaalex observations around
the given target is not available. Using TD1
catalogue to estimate UVIT count rates.

The galactic latitude is between -30 to 30.
Your field cannot be checked using TD1 catalogue!

divyar@ravya-HP-Notebook:~$
```



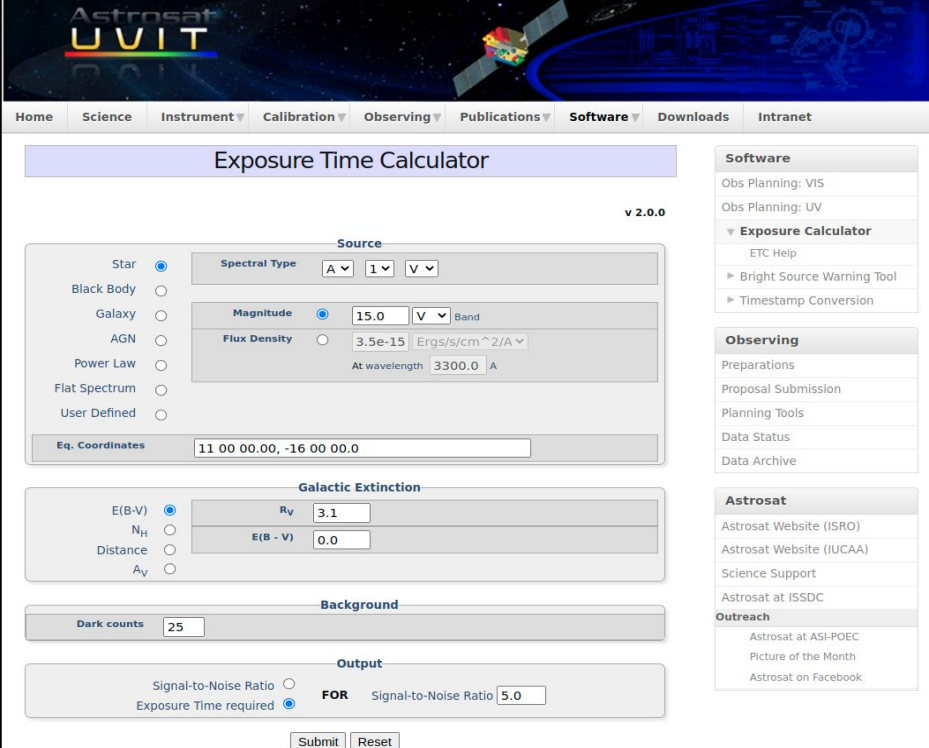
# Special cases UVIT FUV/NUV Filter Checking Tool

- Special cases were discussed in last year webinar by Jayashree and Shah Alam.
- Link: <http://astrosat-ssc.iucaa.in/workshops>



# UVIT Exposure Time Calculator

- Link: <https://uvit.iap.res.in/Software/etc>
- Input: source type, magnitude/flux density, source coordinate
- Output: S/N, exposure time



The screenshot shows the UVIT Exposure Time Calculator web interface. The header features the 'Astrosat UVIT' logo and a navigation menu with links: Home, Science, Instrument, Calibration, Observing, Publications, Software, Downloads, and Intranet. The main title 'Exposure Time Calculator' is displayed in a purple box, with the version 'v 2.0.0' to its right.

The interface is divided into several sections for input:

- Source:** Includes radio buttons for Star (selected), Black Body, Galaxy, AGN, Power Law, Flat Spectrum, and User Defined. It has dropdowns for Spectral Type (A, 1, V) and Magnitude (15.0, V, Band). A Flux Density section shows  $3.5e-15$  Ergs/s/cm<sup>2</sup>/Å at wavelength 3300.0 Å.
- Eq. Coordinates:** A text box containing '11 00 00.0, -16 00 00.0'.
- Galactic Extinction:** Includes radio buttons for E(B-V) (selected), N<sub>H</sub>, Distance, and A<sub>V</sub>. It has input fields for R<sub>V</sub> (3.1) and E(B - V) (0.0).
- Background:** A text box for Dark counts set to 25.
- Output:** Includes radio buttons for Signal-to-Noise Ratio and Exposure Time required (selected). It has a 'FOR' label and an input field for Signal-to-Noise Ratio set to 5.0.

At the bottom are 'Submit' and 'Reset' buttons. On the right side, there is a sidebar with links for Software (Obs Planning: VIS, Obs Planning: UV, Exposure Calculator, ETC Help, Bright Source Warning Tool, Timestamp Conversion), Observing (Preparations, Proposal Submission, Planning Tools, Data Status, Data Archive), and Astrosat (Astrosat Website (ISRO), Astrosat Website (IUCAA), Science Support, Astrosat at ISSDC). The Outreach section includes links for Astrosat at ASI-POEC, Picture of the Month, and Astrosat on Facebook.

# UVIT Exposure Time Calculator

**Source**

Star ☒ Spectral Type A 1 V

Black Body ☐

Galaxy ☐

AGN ☐

Power Law ☐

Flat Spectrum ☐

User Defined ☐

Magnitude ☒ 15.0 V Band

Flux Density ☐ 3.5e-15 Ergs/s/cm^2/A

At wavelength 3300.0 A

Star

Black Body

- Allowed Range: 0.0K to  $10^8$ K

- Temperature of a blackbody decides the shape of its spectrum.

**Source**

Star ☐ Temperature 6000.0 K

Black Body ☒

Galaxy ☐

AGN ☐

Power Law ☐

Flat Spectrum ☐

User Defined ☐

Magnitude ☒ 15.0 V Band

Flux Density ☐ 3.5e-15 Ergs/s/cm^2/A

At wavelength 3300.0 A

# UVIT Exposure Time Calculator



Galaxy

AGN

- Types of template spectra: Liner, Seyfert 1, Seyfert 2, and QSO.

**Source**

Star ☐

Black Body ☐

Galaxy ☒

AGN ☐

Power Law ☐

Flat Spectrum ☐

User Defined ☐

Type: Spiral Sc

Redshift: 0.00

Magnitude: 15.0 V Band

Flux Density: 3.5e-15 Ergs/s/cm^2/A

At wavelength: 3300.0 A

**Source**

Star ☐

Black Body ☐

Galaxy ☐

AGN ☒

Power Law ☐

Flat Spectrum ☐

User Defined ☐

Type: Seyfert 2

Redshift: 0.00

Magnitude: 15.0 V Band

Flux Density: 3.5e-15 Ergs/s/cm^2/A

At wavelength: 3300.0 A

# UVIT Exposure Time Calculator

## Power Law

Star	<input type="radio"/>	Index	<input type="text" value="-1.0"/>
Black Body	<input type="radio"/>	Redshift	<input type="text" value="0.00"/>
Galaxy	<input type="radio"/>		
AGN	<input type="radio"/>	Magnitude	<input checked="" type="radio"/> <input type="text" value="15.0"/> V Band
Power Law	<input checked="" type="radio"/>	Flux Density	<input type="radio"/> <input type="text" value="3.5e-15"/> Ergs/s/cm^2/A At wavelength <input type="text" value="3300.0"/> A
Flat Spectrum	<input type="radio"/>		
User Defined	<input type="radio"/>		
Eq. Coordinates		<input type="text" value="11 00 00.00, -16 00 00.0"/>	

## Flat Spectrum

Source	
Star	<input type="radio"/>
Black Body	<input type="radio"/>
Galaxy	<input type="radio"/>
AGN	<input type="radio"/>
Power Law	<input type="radio"/>
Flat Spectrum	<input checked="" type="radio"/>
User Defined	<input type="radio"/>
Magnitude <input checked="" type="radio"/> <input type="text" value="15.0"/> V Band	
Flux Density <input type="radio"/> <input type="text" value="3.5e-15"/> Ergs/s/cm^2/A At wavelength <input type="text" value="3300.0"/> A	
Eq. Coordinates <input type="text" value="11 00 00.00, -16 00 00.0"/>	

- $S_{\lambda} \propto \lambda^{\alpha}$
- Allowed range of  $\alpha$  is -5 to 5

Source	
Star	<input type="radio"/>
Black Body	<input type="radio"/>
Galaxy	<input type="radio"/>
AGN	<input type="radio"/>
Power Law	<input type="radio"/>
Flat Spectrum	<input type="radio"/>
User Defined	<input checked="" type="radio"/>
Spectrum Upload <input type="button" value="Choose file"/> No file chosen Redshift <input type="checkbox"/> Normalize	

user-defined

# UVIT Exposure Time Calculator

## user-defined

Source

Star ☐ Spectrum Upload  No file chosen

Black Body ☐ Redshift ☐ Normalize ☐

Galaxy ☐

AGN ☐

Power Law ☐

Flat Spectrum ☐

User Defined ☒

## Ascii file format

```
# My source's spectrum
#
# Wavelength      Flux density
# (angstroms)     (ergs/s/cm^2/Å)
1370.10144043    3.97418026e-09
1441.79272461    5.91593765e-09
1502.95971680    9.01411200e-09
1569.54650879    1.03960225e-08
1642.30700684    1.38279651e-08
1722.14147949    1.42179048e-08
1810.13403320    1.73137944e-08
```

# UVIT Exposure Time Calculator

- Source Coordinate Format: (RA, decl) = "hh mm ss.ss, +/-dd mm ss.ss"
- Galactic Extinction parameter is calculated using relation:

$$E(B-V) = A_B - A_V$$

- $N_H$  input units are  $10^{21} \text{ cm}^{-2}$
- Allowed range of  $N_H$  0.00001 to 10000

Eq. Coordinates		11 00 00.00, -16 00 00.0	
Galactic Extinction			
E(B-V)	<input checked="" type="radio"/>	$R_V$	3.1
$N_H$	<input type="radio"/>	E(B - V)	0.0
Distance	<input type="radio"/>		
$A_V$	<input type="radio"/>		
Background			
Dark counts	25		



# UVIT Exposure Time Calculator

- Background Counts: The normal value  $\sim 25$  counts per second which is detector noise, Proposer can provide larger one wants to consider other external contribution.

Parameter: Output

- Signal to noise ratio or
- Exposure time

Eq. Coordinates		11 00 00.00, -16 00 00.0	
Galactic Extinction			
E(B-V)	<input checked="" type="radio"/>	$R_V$	3.1
$N_H$	<input type="radio"/>	E(B - V)	0.0
Distance	<input type="radio"/>		
$A_V$	<input type="radio"/>		
Background			
Dark counts	25		

# UVIT Exposure Time Calculator

## Input for Galaxy M33

Star ☐

Black Body ☐

Galaxy ☒

AGN ☐

Power Law ☐

Flat Spectrum ☐

User Defined ☐

Type

Redshift

Magnitude ☒   Band

Flux Density ☐   At wavelength  Å

Eq. Coordinates

E(B-V) ☒

N<sub>H</sub> ☐

Distance ☐

A<sub>V</sub> ☐

R<sub>V</sub>

E(B - V)

Dark counts

Signal-to-Noise Ratio ☐

Exposure Time required ☒

FOR

Submit

Reset

## Output

Galactic Latitude: 39 deg. (Lower limit is 30 deg.)		
Filter	Source count rate (s <sup>-1</sup> )	Exposure Time (s)
FUV CaF2-1	356.9	0.07
FUV BaF2	303.5	0.08
FUV Sapphire	239.2	0.10
FUV Siilica	97.82	0.26
FUV CaF2-2	314.9	0.08
NUV Siilica	3751.9	less than 0.035
NUV B15	78.33	0.32
NUV B13	1174.0	less than 0.035
NUV B4	1473.2	less than 0.035
NUV N2	335.5	0.07
VIS 3	2.69 x 10 <sup>04</sup> Too Bright!	less than 0.035
VIS 2	8113.3	less than 0.035
VIS 1	7022.0	less than 0.035
VIS ND1	623.3	0.04
VIS BK-7	4.30 x 10 <sup>04</sup> Too Bright!	less than 0.035
Note: Source Count Rate is over the instrument PSF, 1.8"		
<a href="#">Download Output</a> <a href="#">[TXT]</a>		
<a href="#">Return to User Inputs</a>		



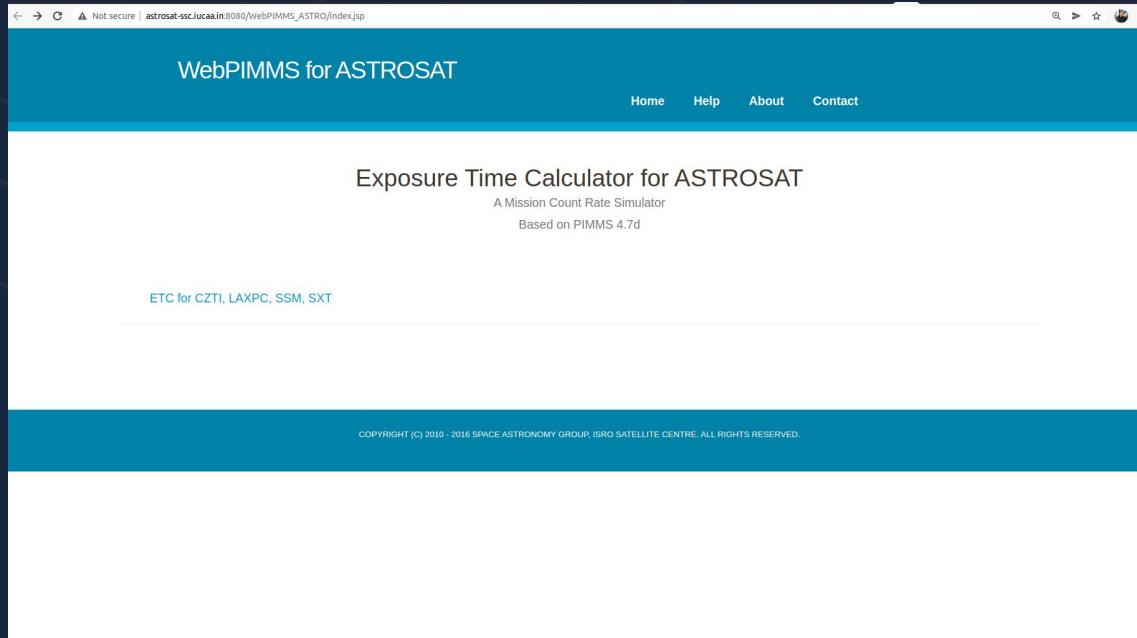
# AstroSat WebPIMMS



- This tool is useful to get an approximate value of count rate with AstroSat instruments SXT, LAXPC, CZTI and SSM.
- One should have prior knowledge of some parameters with other instruments like XMM-Newton, RXTE, etc.
- Link: [http://astrosat-ssc.iucaa.in:8080/WebPIMMS\\_ASTRO/index.jsp](http://astrosat-ssc.iucaa.in:8080/WebPIMMS_ASTRO/index.jsp)



# AstroSat WebPIMMS



# AstroSat WebPIMMS

WebPIMMS for ASTROSAT

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## WebPIMMS for ASTROSAT

A Mission Count Rate Simulator  
Based on PIMMS 4.7d

From:  Input Energy Range:  Units ☒ keV ☐ Angstroms

To:  Output Range:  Energy Units ☒ keV ☐ Angstroms

Source: Flux / Count Rate (ergs/cm<sup>2</sup>/s OR counts/s)  Redshift:

Galactic nH (cm<sup>-2</sup>):  Intrinsic nH (cm<sup>-2</sup>):

Model

☒ Power Law

☐ Black Body

☐ Therm. Bremss.

☐ APEC

Parameters

Photon Index:

Temperature kT:  keV

Temperature kT:  keV

Solar Abundance Ratio:

LogT | keV:

Note:  
\* - If 'Flux/Unabsorbed flux' option is selected in the 'From' box, a range should be entered in the 'Input Energy Range' box. eg. 3-6

From: CHANDRA/HRC-S Count Rate ▾

To:

SWIFT/XRT/PC Count Rate  
SWIFT/XRT/WT Count Rate  
SWIFT/XRT/PD Count Rate  
SWIFT/UVOT/UVW2 Count Rate  
SWIFT/UVOT/UVW1 Count Rate  
SWIFT/UVOT/UVM2 Count Rate  
SWIFT/UVOT/U Count Rate  
SWIFT/UVOT/B Count Rate  
SWIFT/UVOT/V Count Rate  
SWIFT/UVOT/UGRISM Count Rate  
SWIFT/UVOT/VGRISM Count Rate  
SWIFT/UVOT/WHITE Count Rate  
XMM/MOS Thin Count Rate 15 region  
XMM/MOS Med Count Rate 15 region  
XMM/MOS Thick Count Rate 15 region  
**XMM/PN Thin Count Rate 15 region**  
XMM/PN Med Count Rate 15 region  
XMM/PN Thick Count Rate 15 region  
XMM/RGS1 Count Rate  
XMM/RGS2 Count Rate

Input Energy Range: default

Units ☒ keV ☐ Angstroms

Output Energy Range: default

Units ☒ keV ☐ Angstroms

Redshift : 0

Intrinsic  
nH (cm<sup>-2</sup>) : 0

### Parameters

Photon Index :

Temperature kT : keV

Temperature kT : keV

Solar Abundance Ratio : 0.2 ▾

LogT | keV : 5.60 | 0.0343 ▾

# AstroSat WebPIMMS

## WebPIMMS for ASTROSAT

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### WebPIMMS for ASTROSAT

A Mission Count Rate Simulator

Based on PIMMS 4.7d

From:  Input Energy Range:  Units ☒ keV ☐ Angstroms

To:  Output Energy Range:  Units ☒ keV ☐ Angstroms

Source:

Flux  
Count Rate  
(ergs/cm<sup>2</sup>/s  
OR  
counts/s)

Redshift  
:

Galactic  
nH (cm<sup>-2</sup>):

Intrinsic  
nH  
(cm<sup>-2</sup>):

#### Model

☒ Power Law

☐ Black Body

☐ Therm.  
Brems.

☐ APEC

#### Parameters

Photon Index :

Temperature kT :

keV

Temperature kT :

keV

Solar Abundance Ratio :

LogT | keV :

ESTIMATE



# AstroSat WebPIMMS

## WebPIMMS for ASTROSAT

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### WebPIMMS for ASTROSAT

A Mission Count Rate Simulator

Based on PIMMS 4.7d

From:  Input Energy Range:  Units ☒ keV ☐ Angstroms

To:  Output Energy Range:  Units ☒ keV ☐ Angstroms

Source: Flux / Count Rate (ergs/cm<sup>2</sup>/s OR counts/s)  Redshift:

Galactic nH (cm<sup>-2</sup>):  Intrinsic nH (cm<sup>-2</sup>):

#### Model

☒ Power Law

☐ Black Body

☐ Therm. Brems.

☐ APEC

#### Parameters

Photon Index:

Temperature kT:

Temperature kT:

Solar Abundance Ratio:

LogT | keV:

ESTIMATE

## WebPIMMS for ASTROSAT

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### Web PIMMS for ASTROSAT - Result

#### INPUTS:

From : xmm pn thin  
Instrument : astrosat laxpc  
Input Energy : 4.0-10.0 keV  
Output Energy : 3.0-80.0 keV  
Source : Count Rate : 50 counts/s  
Galactic nH : 0.47e22 cm<sup>-2</sup>  
Redshift : 0  
Intrinsic nH : 0 cm<sup>-2</sup>  
Model : Power Law  
Photon Index : 1.5

#### OUTPUTS:

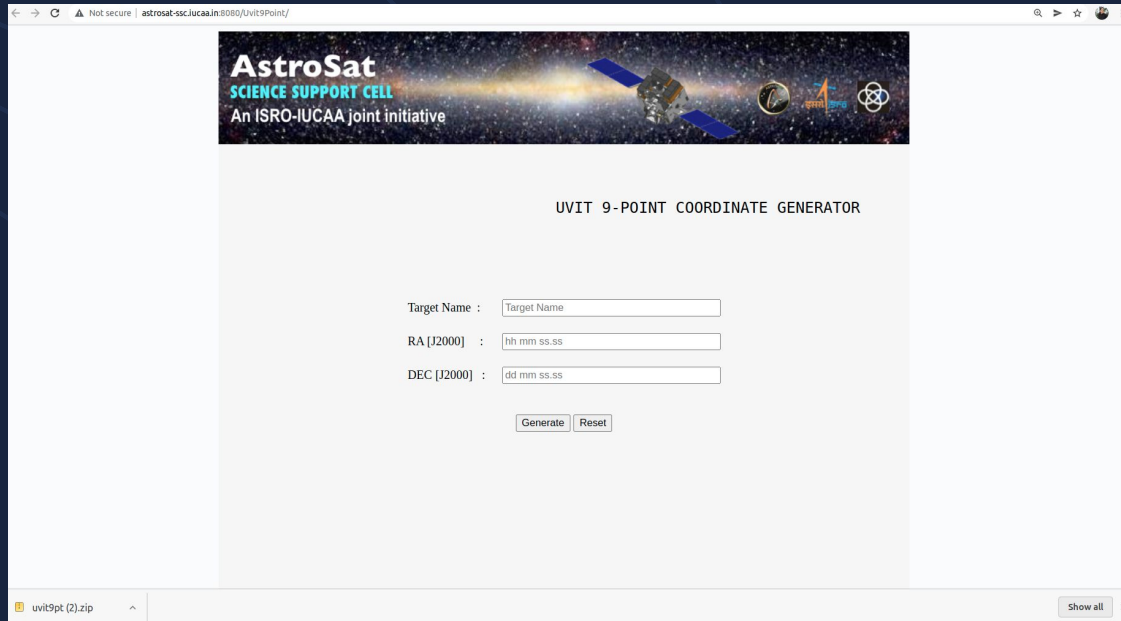
\* For power law model with photon index = 1.5000; NH = 4.700E+21 and 5.000E+01 cps in XMM PN THIN ( 4.000- 10.000keV)  
%!% Pile-up corrected PATTERN=0-4 rate in 5 arcmin region assumed (Internal model normalization = 1.895E-01)  
\* PIMMS predicts 2.581E+02 cps with ASTROSAT LAXPC20 ( 3.000- 80.000keV)  
PIMMS >

[Download the above output as a PDF file](#)

[Back](#)

# UVIT 9-point coordinate generator

- Check for bright sources that may be harmful to the UVIT.
- It scans 9-point around a desired target.
- Link: <http://astrosat-ssc.iucaa.in:8080/Uvit9Point/>



The screenshot shows a web browser window with the URL `astrosat-ssc.iucaa.in:8080/Uvit9Point/`. The page features a header banner for "AstroSat SCIENCE SUPPORT CELL" with the text "An ISRO-IUCAA joint initiative" and an image of the AstroSat satellite. Below the banner, the title "UVIT 9-POINT COORDINATE GENERATOR" is centered. The form contains three input fields: "Target Name" (with placeholder text "Target Name"), "RA [J2000]" (with placeholder text "hh mm ss.ss"), and "DEC [J2000]" (with placeholder text "dd mm ss.ss"). At the bottom of the form are two buttons: "Generate" and "Reset". A file download bar at the bottom of the browser shows "uvit9pt (2).zip" and a "Show all" button.

AstroSat  
SCIENCE SUPPORT CELL  
An ISRO-IUCAA joint initiative

UVIT 9-POINT COORDINATE GENERATOR

Target Name :


RA [J2000] :

DEC [J2000] :

uvit9pt (2).zip

# UVIT 9-point coordinate generator

9Point/



**AstroSat**  
SCIENCE SUPPORT CELL  
An ISRO-IUCAA joint initiative

## UVIT 9-POINT COORDINATE GENERATOR

Target Name :

RA [J2000] :

DEC [J2000] :

```
GRS1915+105_1 19 15 11.60 +10 56 44.00
GRS1915+105_2 19 14 44.72 +10 50 07.93
GRS1915+105_3 19 15 38.49 +10 56 43.93
GRS1915+105_4 19 14 44.71 +10 56 43.93
GRS1915+105_5 19 15 38.50 +11 03 19.93
GRS1915+105_6 19 14 44.70 +11 03 19.93
GRS1915+105_7 19 15 11.60 +10 50 08.00
GRS1915+105_8 19 15 11.60 +11 03 20.00
GRS1915+105_9 19 15 38.48 +10 50 07.93
```

[Download File](#)

# UVIT 9-point coordinate generator script



- >> unzip uvit9pt.zip
- >> python uvit9pt.py
- Input: Target\_name, RA, and Dec of source
- Output: Text file with name `Target\_name\_9pt.txt`

```
divyarawat@sysadmin-OptiPlex-5050:~/UVIT_bright_source_warning_tool$ unzip uvit9pt.zip
Archive: uvit9pt.zip
  creating: uvit9pt/
  inflating: uvit9pt/README.uvit9pt
   creating: __MACOSX/
   creating: __MACOSX/uvit9pt/
  inflating: __MACOSX/uvit9pt/._README.uvit9pt
  inflating: uvit9pt/uvit9pt.py
divyarawat@sysadmin-OptiPlex-5050:~/UVIT_bright_source_warning_tool$ python2 uvit9pt/uvit9pt.py
Target Name: GRS1915+105
RA [J2000] (hh mm ss.ss): 19 15 11.6
Dec [J2000] (+dd mm ss.ss): 10 56 44
Nine-point targets written in the file GRS1915+105_9pt.txt
divyarawat@sysadmin-OptiPlex-5050:~/UVIT_bright_source_warning_tool$ cat GRS1915+105_9pt.txt
GRS1915+105_1 19 15 11.60 +10 56 44.00
GRS1915+105_2 19 14 44.72 +10 50 07.93
GRS1915+105_3 19 15 38.49 +10 56 43.93
GRS1915+105_4 19 14 44.71 +10 56 43.93
GRS1915+105_5 19 15 38.50 +11 03 19.93
GRS1915+105_6 19 14 44.70 +11 03 19.93
GRS1915+105_7 19 15 11.60 +10 50 08.00
GRS1915+105_8 19 15 11.60 +11 03 20.00
GRS1915+105_9 19 15 38.48 +10 50 07.93
divyarawat@sysadmin-OptiPlex-5050:~/UVIT_bright_source_warning_tool$
```

The background is a dark blue space-themed illustration. It features several stylized galaxies with blue and white spiral patterns. Numerous small, white, four-pointed stars are scattered across the field. A yellow comet with a long, orange and yellow tail is positioned in the upper left. A blue planet with a light blue ring system is located in the lower left. A cluster of blue circles of varying sizes, resembling a nebula or star cluster, is in the lower right. A yellow star with a long, white tail is in the upper right. The text "THANK YOU" is centered in a bold, white, sans-serif font.

# THANK YOU