



## 17529 - Adding the Stripped-Envelope Supernova iPTF 13bvn to the Ongoing Search for Surviving Companion Stars

Cycle: 31, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

### INVESTIGATORS

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<b>Dr. Ori Dosovitz Fox (PI) (Contact)</b>	<b>Space Telescope Science Institute</b>
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Dr. Benjamin F. Williams (CoI)	University of Washington
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Dr. Sebastian Gomez (CoI)	University of Texas at Austin
Dr. Justin Pierel (CoI)	Space Telescope Science Institute
Dr. Melissa Shahbandeh (CoI)	Space Telescope Science Institute

**VISITS**

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:28.0	yes
02	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:28.0	yes
03	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:28.0	yes
04	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:28.0	yes
05	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:29.0	yes
06	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:29.0	yes
07	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:29.0	yes
08	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:29.0	yes
09	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:30.0	yes
10	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:30.0	yes
11	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:30.0	yes
12	(1) IPTF-13BVN	WFC3/UVIS	1	03-Sep-2025 12:00:30.0	yes

12 Total Orbits Used

**ABSTRACT**

The mass-loss mechanism for stripped-envelope supernovae (SESNe) remains debated, but evidence is starting to mount in support of binary star mass-transfer. There are now five direct post-explosion detections of surviving companions. A statistically complete sample of companion-masses can provide important constraints on the underlying physics used in binary evolution models, which have implications on many stellar systems, including merger sources for gravitational waves. The sample is still too small. Every additional data point is impactful. But building the proper dataset is a tedious and painstaking process given the small number of reasonable candidates each year. We confirm that all other viable nearby SESNe at <20 Mpc have already been targeted. Here we propose optical+UV observations of the next most feasible and interesting target, iPTF 13bvn at 22 Mpc, to detect (or place meaningful limits on) any surviving companion. iPTF 13bvn was the very first SN Ib to have a progenitor identification, but the details have remained shrouded in ambiguity. A follow-up search for a surviving companion was never fully explored because the distance initially seemed prohibitive. We show that despite these limitations, deep UV/F336W imaging can now offer an optimum detection strategy for the expected hot, blue stellar companion, while optical imaging can constrain the companion star model, rule out shock interaction

Proposal 17529 (STScI Edit Number: 1, Created: Wednesday, September 3, 2025, 11:00:31AM Eastern Standard Time) - Overview contributions, and probe less likely, but possible, cooler star companions. Given HST's time horizon and the requisite waiting period to allow new SNe to fade before conducting a companion search, now is the time to take full advantage of HST's unique UV capabilities.

## **OBSERVING DESCRIPTION**

WFC3:

- Use entire array to acquire fiducial stars for alignment purposes
- Use 512\_UVIS2\_CTE aperture to minimize photon transfer losses
- When scheduled, please have CS contact PI to finalize pos\_tag based on final orientation
  
- EXPTIME (actual):
  - SN iPTF13bvn (12 orbits)
    - F336W (17500 s)
    - F555W (13500 s)
- FLASH = varies with aim of minimizing photon transfer losses and read noise
  - Here is the situation:
    - \*We are trying to detect a single, very faint source (surviving star from a supernova). We only care about one position, not the entire field.
    - \*We have placed the pointing in the center of the UVIS2-512C-CTE aperture, so that will help with the CTE.
    - \*We are not sure what the background from the galaxy looks like, but it may contribute to the flux slightly (or not at all).
    - \*It is easy to adjust the Flash value in APT to turn the warning off, but we are hoping we aren't adding too much noise unnecessarily, as this source is faint.
  
- For dithering, we use 5 different POS TARGS instead

\*Impact of Gyros\*

We have considered the impact of reduced gyro operations on our program, which has 12 orbits requested. We were able to successfully reduce this target to 4 visits, each with 3 orbits per visit. The only condition is that all filters must be obtained in the same orientation for several reasons, including time variability and optimized sampling and reductions. Therefore, we have added the constraint that all be scheduled within 1 day of each other.

<b>Visit</b>	Proposal 17529, iPTF13bvn_1 (01), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000  <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>Category=EXT-STAR</i> <i>Description=[SUPERNOVA TYPE IB]</i>	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD				
<b>Exposures</b>	<b>#</b>	<b>Label (ETC Run)</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 0,0		2500 Secs (1383 Secs)	
									[==>1383.0 Secs ]	[1]
	2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W			POS TARG 0,0	2500 Secs (1050 Secs)	
								[==>1050.0 Secs ]	[1]	
<b>Orbit Structure</b>	<p><b>Orbit 1</b> <span style="float: right;">Server Version: 20250624</span></p> <p>Unused Orbital Visibility = 0</p> <p>The diagram shows a horizontal timeline from 0 to 6000 seconds. Key events are marked with arrows: 'GS Acq' at 0s, 'Exp. 1' (green box with double arrows) at approximately 400s, 'Overhead' at approximately 1800s, 'Exp. 2' (green box with double arrows) at approximately 1900s, 'Overhead' at approximately 2900s, and 'Occultation' (black bar) from approximately 3000s to 3700s. A blue checkered bar indicates orbital visibility from approximately 400s to 5700s. A white bar represents the total mission duration from 0s to 5700s.</p>									

<b>Visit</b>	Proposal 17529, iPTF13bvn_1 (02) Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=EXT-STAR Description=[SUPERNOVA TYPE IB]										
<b>Exposures</b>	<b>#</b>	<b>Label (ETC Run)</b>	<b>Target</b>	<b>Config, Mode, Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 0.1719,0 .1970		2500 Secs (1381 Secs)	
									[==>1381.0 Secs ]	[1]
2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W			POS TARG 0.1719,0 .1970		2500 Secs (1051 Secs)	
								[==>1051.0 Secs ]	[1]	
<b>Orbit Structure</b>	<b>Orbit 1</b> <span style="float: right;">Server Version: 20250624</span>									
	<p>The diagram illustrates the orbit structure over a 6000-second period. Key events include:</p> <ul style="list-style-type: none"> <li><b>GS Acq:</b> Ground Station Acquisition at approximately 0 seconds.</li> <li><b>Exp. 1:</b> Exposure 1 (F336W) from ~300s to ~1700s.</li> <li><b>Overhead:</b> Overhead time between Exp. 1 and Exp. 2.</li> <li><b>Exp. 2:</b> Exposure 2 (F555W) from ~1800s to ~3000s.</li> <li><b>Occultation:</b> A black bar from ~3100s to ~3800s.</li> <li><b>Unused Orbital Visibility = 1:</b> A period from ~3000s to ~5700s.</li> </ul>									

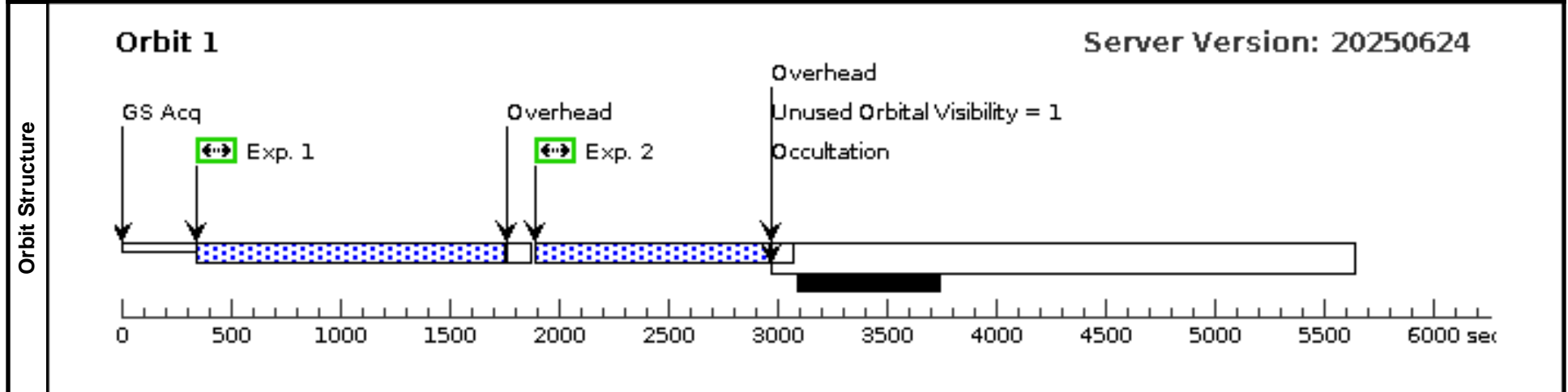
<b>Visit</b>	Proposal 17529, iPTF13bvn_1 (03) Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=EXT-STAR Description=[SUPERNOVA TYPE IB]										
<b>Exposures</b>	<b>#</b>	<b>Label (ETC Run)</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 0.3437,0 .3542		2500 Secs (1381 Secs)	
									[==>1381.0 Secs ]	[1]
2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W			POS TARG 0.3437,0 .3542		2500 Secs (1051 Secs)	
									[==>1051.0 Secs ]	[1]
<b>Orbit Structure</b>	<b>Orbit 1</b> <span style="float: right;">Server Version: 20250624</span>									
	<p>The diagram illustrates the orbit structure over a 6000-second period. Key events include:</p> <ul style="list-style-type: none"> <li><b>GS Acq:</b> Ground Station Acquisition at approximately 0 seconds.</li> <li><b>Exp. 1:</b> Exposure 1 (F336W) starting around 400 seconds and ending around 1800 seconds.</li> <li><b>Overhead:</b> A period of overhead between the end of Exp. 1 and the start of Exp. 2.</li> <li><b>Exp. 2:</b> Exposure 2 (F555W) starting around 1900 seconds and ending around 3000 seconds.</li> <li><b>Occultation:</b> A period of occultation starting around 3000 seconds and ending around 3800 seconds.</li> <li><b>Unused Orbital Visibility = 1:</b> A period of unused orbital visibility starting around 3000 seconds and ending around 5500 seconds.</li> </ul>									

<b>Visit</b>	Proposal 17529, iPTF13bvn_2 (04) Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=EXT-STAR Description=[SUPERNOVA TYPE IB]										
<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F336W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 1,0		2500 Secs (1383 Secs)	
									[==>1383.0 Secs ]	[1]
2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W			POS TARG 1,0	2500 Secs (1050 Secs)		
								[==>1050.0 Secs ]	[1]	
<b>Orbit Structure</b>	Server Version: 20250624									
	<p>The diagram illustrates the orbit structure over a 6000-second period. Key events include:</p> <ul style="list-style-type: none"> <li><b>GS Acq:</b> Ground Station Acquisition at approximately 0 seconds.</li> <li><b>Exp. 1:</b> Exposure 1 (F336W) from ~300s to ~1800s.</li> <li><b>Overhead:</b> Overhead time between exposures.</li> <li><b>Exp. 2:</b> Exposure 2 (F555W) from ~1900s to ~3000s.</li> <li><b>Overhead:</b> Overhead time following the second exposure.</li> <li><b>Occultation:</b> A black bar from ~3100s to ~3800s.</li> <li><b>Unused Orbital Visibility = 0:</b> A period from ~3000s to ~5700s where the target is not visible.</li> </ul>									

<b>Visit</b>	Proposal 17529, iPTF13bvn_2 (05)				
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFC3/UVIS				
	Special Requirements: (none)				

<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					
	<i>Category=EXT-STAR</i>					
	<i>Description=[SUPERNOVA TYPE IB]</i>					

<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 1.1719,0 .1970		2500 Secs (1381 Secs) [=>1381.0 Secs ]	[1]
	2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W		POS TARG 1.1719,0 .1970		2500 Secs (1051 Secs) [=>1051.0 Secs ]	[1]

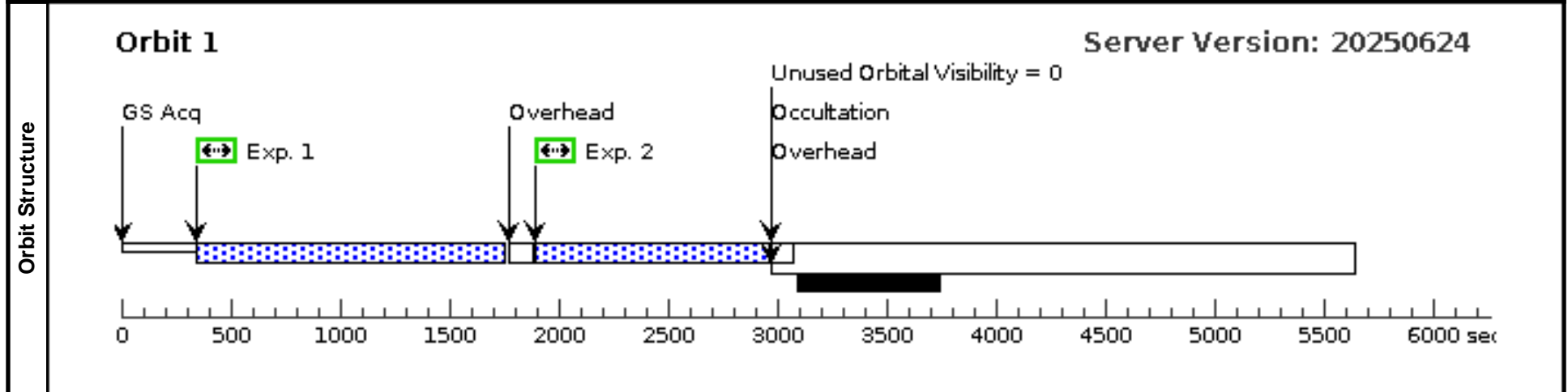


<b>Visit</b>	Proposal 17529, iPTF13bvn_2 (06) Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=EXT-STAR Description=[SUPERNOVA TYPE IB]										
<b>Exposures</b>	<b>#</b>	<b>Label (ETC Run)</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 1.3437,0 .3542		2500 Secs (1381 Secs)	
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2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W			POS TARG 1.3437,0 .3542		2500 Secs (1051 Secs)	
								[==>1051.0 Secs ]	[1]	
<b>Orbit Structure</b>	<b>Orbit 1</b> <span style="float: right;">Server Version: 20250624</span>									
	<p>The diagram shows a timeline for Orbit 1 from 0 to 6000 seconds. Key events include: GS Acq at 0s, Exp. 1 (green box) from ~300s to ~450s, Overhead (white box) from ~450s to ~1800s, Exp. 2 (green box) from ~1800s to ~2000s, Occultation (black bar) from ~3000s to ~3800s, and Unused Orbital Visibility = 1 (white bar) from ~3000s to ~5500s. A blue checkered bar represents the total observation period from ~300s to ~5500s.</p>									

<b>Visit</b>	Proposal 17529, iPTF13bvn_3 (07)				
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFC3/UVIS				
	Special Requirements: (none)				

<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					
	<i>Category=EXT-STAR</i>					
	<i>Description=[SUPERNOVA TYPE IB]</i>					

<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 0,1		2500 Secs (1383 Secs) [=>1383.0 Secs]	[1]
	2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W		POS TARG 0,1		2500 Secs (1050 Secs) [=>1050.0 Secs]	[1]

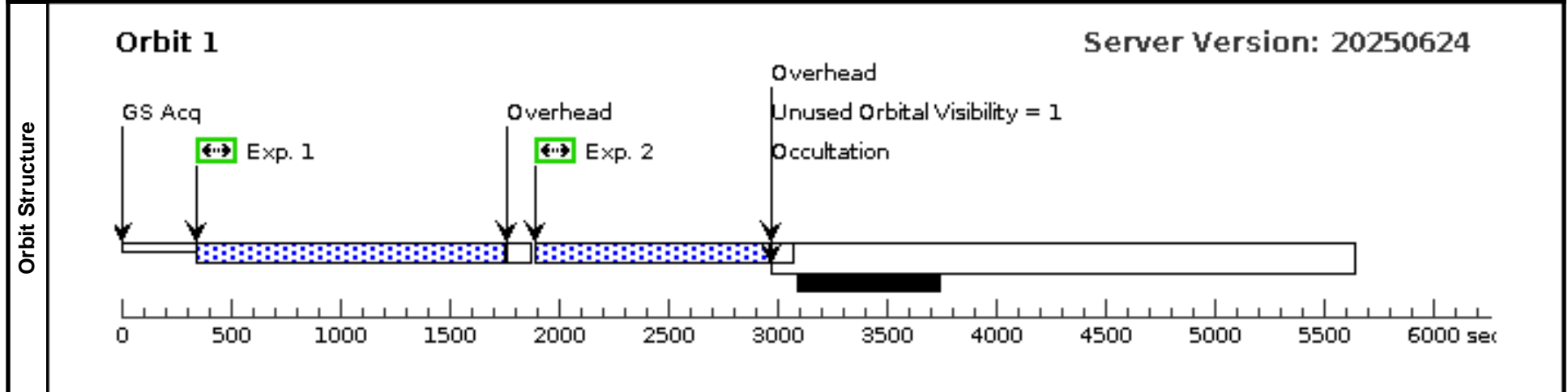


Visit	<b>Proposal 17529, iPTF13bvn_3 (08)</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: (none)																														
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>IPTF-13BVN</td> <td>                     RA: 15 00 0.1520 (225.0006333d)                      Dec: +01 52 53.17 (1.88144d)                      Equinox: J2000                 </td> <td>Epoch of Position: 2015.5</td> <td>V=25</td> <td>Reference Frame: SIMBAD</td> </tr> </tbody> </table> <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                  Category=EXT-STAR                  Description=[SUPERNOVA TYPE IB]</p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD																	
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#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit																						
1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 0.1719,1 .1970		2500 Secs (1381 Secs) [=>1381.0 Secs]	[1]																						
2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W		POS TARG 0.1719,1 .1970		2500 Secs (1051 Secs) [=>1051.0 Secs]	[1]																						
Orbit Structure	<p><b>Orbit 1</b> <span style="float: right;"><b>Server Version: 20250624</b></span></p> <p>Unused Orbital Visibility = 1</p> <p>GS Acq</p> <p>Exp. 1</p> <p>Overhead</p> <p>Exp. 2</p> <p>Overhead</p> <p>Occultation</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec</p>																														

<b>Visit</b>	Proposal 17529, iPTF13bvn_3 (09)				
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFC3/UVIS				
	Special Requirements: (none)				

<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					
	<i>Category=EXT-STAR</i>					
	<i>Description=[SUPERNOVA TYPE IB]</i>					

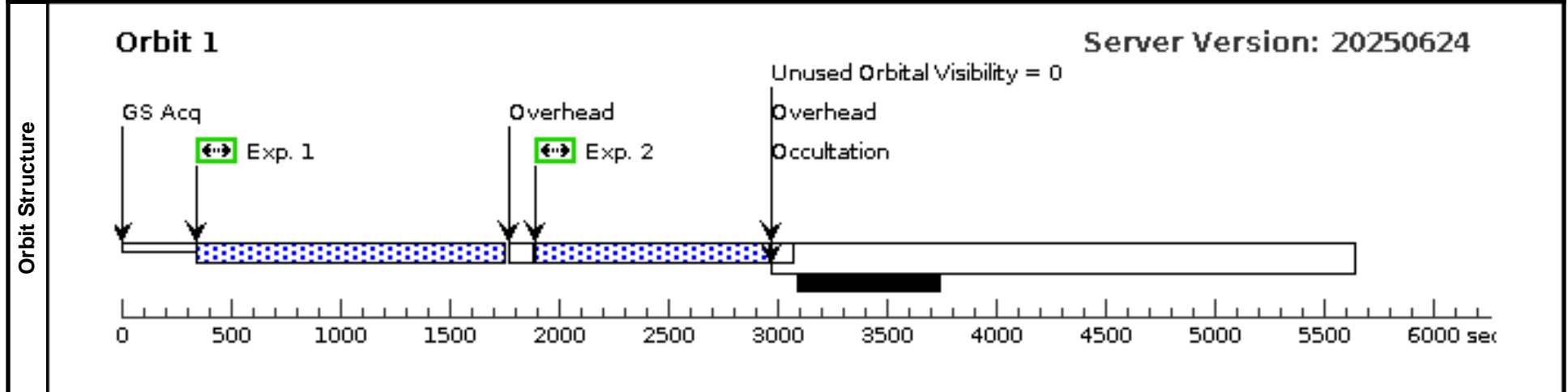
<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 0.3437,1 .3542		2500 Secs (1381 Secs) [=>1381.0 Secs ]	[1]
	2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W		POS TARG 0.3437,1 .3542		2500 Secs (1051 Secs) [=>1051.0 Secs ]	[1]



<b>Visit</b>	Proposal 17529, iPTF13bvn_4 (10)				
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFC3/UVIS				
	Special Requirements: (none)				

<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					
	<i>Category=EXT-STAR</i> <i>Description=[SUPERNOVA TYPE IB]</i>					

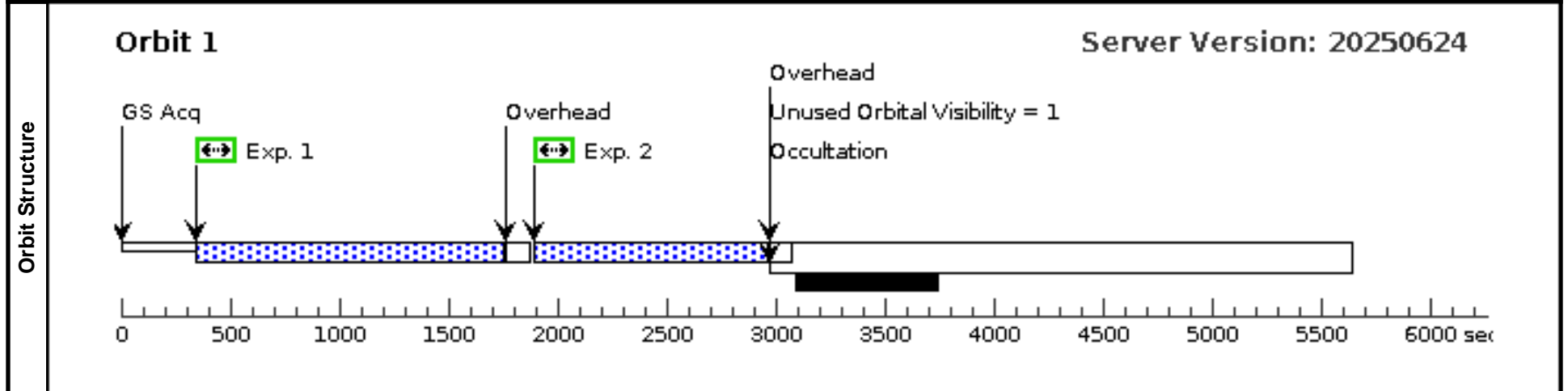
<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F336W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 1,1		2500 Secs (1383 Secs) [=>1383.0 Secs]	[1]
	2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W		POS TARG 1,1		2500 Secs (1050 Secs) [=>1050.0 Secs]	[1]



<b>Visit</b>	Proposal 17529, iPTF13bvn_4 (11)				
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFC3/UVIS				
	Special Requirements: (none)				

<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					
	<i>Category=EXT-STAR</i>					
	<i>Description=[SUPERNOVA TYPE IB]</i>					

<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 1.1719,1 .1970		2500 Secs (1381 Secs) [=>1381.0 Secs ]	[1]
	2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W		POS TARG 1.1719,1 .1970		2500 Secs (1051 Secs) [=>1051.0 Secs ]	[1]



<b>Visit</b>	Proposal 17529, iPTF13bvn_4 (12) Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: GROUP 12,01,02,03,04,05,06,07,08,09,10,11 WITHIN 7D									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(1)	IPTF-13BVN	RA: 15 00 0.1520 (225.0006333d) Dec: +01 52 53.17 (1.88144d) Equinox: J2000	Epoch of Position: 2015.5	V=25	Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=EXT-STAR Description=[SUPERNOVA TYPE IB]										
<b>Exposures</b>	<b>#</b>	<b>Label (ETC Run)</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	F336W (WFC3UVI S.im.144876 9)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=12	POS TARG 1.3437,1 .3542		2500 Secs (1381 Secs) [=>1381.0 Secs]	[1]
	2	F555W (WFC3UVI S.im.145235 2)	(1) IPTF-13BVN	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W		POS TARG 1.3437,1 .3542		2500 Secs (1051 Secs) [=>1051.0 Secs]	[1]
<b>Orbit Structure</b>	<b>Orbit 1</b> <span style="float: right;">Server Version: 20250624</span>									
	<p>The diagram illustrates the orbit structure over a 6000-second period. Key events include:</p> <ul style="list-style-type: none"> <li><b>GS Acq:</b> Ground Station Acquisition at approximately 0 seconds.</li> <li><b>Exp. 1:</b> Exposure 1 (F336W) starting at ~400s and ending at ~1700s.</li> <li><b>Overhead:</b> A period of overhead between Exp. 1 and Exp. 2.</li> <li><b>Exp. 2:</b> Exposure 2 (F555W) starting at ~1800s and ending at ~3100s.</li> <li><b>Occultation:</b> A period of occultation (black bar) starting at ~3100s and ending at ~3800s.</li> <li><b>Unused Orbital Visibility = 1:</b> A period of unused orbital visibility (white bar) starting at ~3100s and ending at ~5700s.</li> </ul>									