



11181 - SAINTS - Supernova 1987A INTensive Survey

Cycle: 16, Proposal Category: GO

(Availability Mode: SUPPORTED)

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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) SN1987A	WFPC2	4	18-Jan-2008 02:20:06.0	yes

4 Total Orbits Used

ABSTRACT

SAINTS is a program to observe SN 1987A, the brightest supernova in 383 years, as it matures into the youngest supernova remnant at age 20. HST is the essential tool for spatially-resolved observations of SN1987A's many components. A violent encounter is now underway between the fastest-moving debris and the circumstellar ring: the shock excites "hotspots." The optical, infrared and X-ray fluxes are rising rapidly on 6-month time scales: we have organized HST, SPITZER, and CHANDRA observations to understand these regions. In Cycle 16, the separate hotspots may begin to fuse as the shock fully enters the circumstellar ring. Photons from these shocks will excite previously invisible gas outside the ring, revealing the true extent of the mass loss that preceded the explosion of Sanduleak -69 202. The inner debris of the explosion, excited by radioactive isotopes from the explosion, is now resolved and seen to be aspherical, providing direct evidence on the

asymmetry of the explosion. Questions about SN 1987A remain unanswered. How did the enigmatic three rings form? Precisely what happened during the core collapse and bounce? Is a black hole or a neutron star left behind? The rich and deep data set from SAINTS will help answer these central questions of supernova science.

OBSERVING DESCRIPTION

4 orbits for sn1987a

Proposal 11181 - Visit 01 - SAINTS - Supernova 1987A INTensive Survey

Fri Jan 18 07:20:12 GMT 2008

Visit		Proposal 11181, Visit 01 Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 70.0D TO 90.0 D; BETWEEN 01-FEB-2008:00:00:00 AND 01-MAY-2008:00:00:00								
Patterns	#	Primary Pattern		Secondary Pattern			Exposures			
	(1)	Pattern Type=WFPC2-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.559017 Line Spacing=0.559017	Coordinate Frame=POS-TARG Pattern Orientation=26.56505 Angle Between Sides=143.1301 Center Pattern=false					(1-3)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN1987A	WFPC2, IMAGE, PC1	F439W	CR-SPLIT=NO			Pattern 1-3 (1)	600.0 Secs	
									[=>(Pattern 1)]	[1]
									[=>(Pattern 2)]	[2]
									[=>(Pattern 3)]	[3]
									[=>(Pattern 4)]	[4]
	2	(1) SN1987A	WFPC2, IMAGE, PC1	F675W	CR-SPLIT=NO			Pattern 1-3 (1)	400.0 Secs	
									[=>(Pattern 1)]	[1]
									[=>(Pattern 2)]	[2]
									[=>(Pattern 3)]	[3]
									[=>(Pattern 4)]	[4]
	3	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO			Pattern 1-3 (1)	1100.0 Secs	
									[=>(Pattern 1)]	[1]
								[=>(Pattern 2)]	[2]	
								[=>(Pattern 3)]	[3]	
								[=>(Pattern 4)]	[4]	



