



## 15686 - A near-IR spectrum of the old Type Ia SN 2017erp

Cycle: 26, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

### INVESTIGATORS

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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) SN-2017ERP	WFC3/IR	1	07-Feb-2019 15:00:39.0	yes

1 Total Orbits Used

### ABSTRACT

We ask for 1 orbit of WFC3/IR+G141 to acquire a spectrum of a Type Ia supernova (SN Ia) >500 days after maximum light. The SN in question, SN 2017erp, is one that we have been following along with several other SNe Ia with HST in F160W and F350LP. These observations have revealed a plateau in the F160W (H) band, after which the light curve once again begins to decline. Several works have published near-IR spectra of SNe Ia taken during this plateau, but no near-IR spectrum of a SN Ia exists at >500 days, during the second decline phase. The spectrum we will acquire through this proposal will be the first such spectrum for a SN Ia; reveal why SNe Ia transition from the plateau to the decline phase; and complete our analysis.

### OBSERVING DESCRIPTION

The goal of this program is to obtain a G141 spectrum of a faint supernova (F160W=22 mag, Vega). It is located in an outer spiral arm of a nearby, face-on galaxy, so there is fear of contamination.

Proposal 15686 (STScI Edit Number: 0, Created: Thursday, February 7, 2019 at 3:00:40 PM Eastern Standard Time) - Overview

I ask that the observations be carried out as soon as possible, to maximize the signal-to-noise ratio of the resultant spectrum.

The available visibility windows, coupled with the above constraint, afford only a limited range of orients. To minimize contamination, I ask that the orient be limited to +305 to +307 degrees.

I couple the grism observation with a direct image in F160W. Although usually F140W would be used, I have been observing this supernova in F160W, so another photometry point in this filter would be valuable.

Proposal 15686 - grism sequence (01) - A near-IR spectrum of the old Type Ia SN 2017erp

Thu Feb 07 20:00:40 GMT 2019

<b>Visit</b>	<b>Proposal 15686, grism sequence (01)</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/IR Special Requirements: ORIENT 305D TO 307 D; BEFORE 10-MAR-2019:00:00:00									
	(grism sequence (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN									
<b>Diagnosics</b>										
<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>						
	(3)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)						
<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)	SN-2017ERP	RA: 15 09 14.8100 (227.3117083d) Dec: -11 20 3.20 (-11.33422d) Equinox: J2000	Epoch of Position: 2015.5	V=(?) F160W = 21.5 (Vega)	Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=EXT-STAR Description=[SUPERNOVA TYPE IA] Extended=NO										
<b>Exposures</b>	<b>#</b>	<b>Label</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	G141 grism	(1) SN-2017ERP	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS 100; NSAMP=12		Pattern 3, Exps 1-2 in grism sequence (01) (3)	1102.935844 Secs (2205.872 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
2	F160W direct image	(1) SN-2017ERP	WFC3/IR, MULTIACCUM, GRISM1024	F160W	NSAMP=10; SAMP-SEQ=SPARS25		Pattern 3, Exps 1-2 in grism sequence (01) (3)	227.936926 Secs (455.874 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]	

