



11553 - HST Imaging of the Luminous Transient in NGC 300

Cycle: 16, 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) NGC300-TRANSIENT	WFPC2	1	14-Aug-2008 21:09:01.0	yes
02	(1) NGC300-TRANSIENT	WFPC2	1	14-Aug-2008 21:09:07.0	yes

2 Total Orbits Used

ABSTRACT

A luminous optical transient discovered in the nearby (~2.2 Mpc) Sculptor Group spiral NGC 300 in May 2008 appears to be a new member of the V838 Monocerotis class of stars that expand in a few weeks to become red supergiants. Spectroscopic observations show that the NGC 300 OT is categorically not a classical nova, supernova, or luminous blue variable. At an absolute magnitude of -12.5, it is by far the brightest star at present in NGC 300, but if it follows the pattern of V838 Mon and the similar object M31 RV, it will fade away rapidly in about 3 months.

Before it fades, we propose to obtain WFPC2 images in order to locate the position of the object to within a few milliarcsec. This will allow us to identify the progenitor object, based on a superb set of pre-outburst ACS and WFPC2 images of NGC 300 available in the archive. We also propose a

second observation in September 2008, in order to search for emergence of a light echo similar to the spectacular one that surrounds V838 Mon. If a light echo does appear, follow-up ACS polarimetry after SM4 offers the possibility of a direct geometric distance determination, allowing a fundamental calibration of the rich variety of standard candles that exist in NGC 300 (Cepheids, red-giant tip, planetary nebulae, etc.).

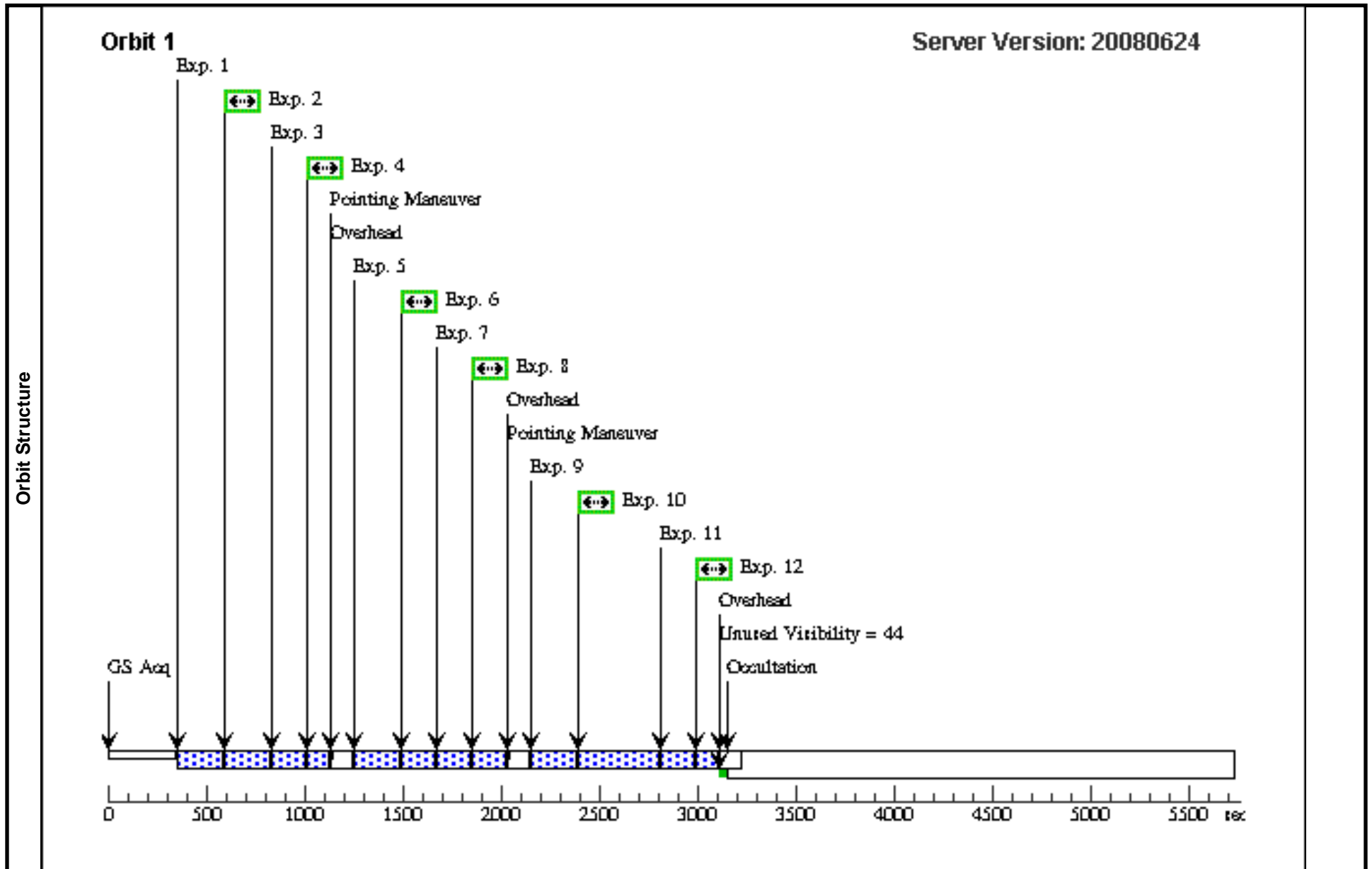
OBSERVING DESCRIPTION

We will obtain WFPC2 images in B (F450W) and I (F814W) in early June 2008, for the purpose of identifying the progenitor of the NGC 300 optical transient (OT) in archival ACS images. At each of 3 dither positions, we will obtain short exposures in both filters that will not saturate the image of the OT (expected to be at about magnitude 14) and longer exposures at the same pointing that will show enough background stars for registration with the ACS images. We will also make the same set of observations (possibly with longer exposure times if the star has faded) in September 2008 to search for emergence of a light echo, similar to that seen around the Galactic star V838 Mon.

Proposal 11553 - Visit 01 - HST Imaging of the Luminous Transient in NGC 300

Fri Aug 15 01:09:11 GMT 2008

Visit	Proposal 11553, Visit 01, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: BEFORE 15-JUN-2008:00:00:00									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	NGC300-TRANSIENT Alt Name1: NGC300-OT	RA: 00 54 34.5090 (13.6437875d) Dec: -37 38 31.43 (-37.64206d) Equinox: J2000			V=14+/-1	Reference Frame: ICRS			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F450W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -7,-7		10 Secs [==>]	[1]
	2		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F450W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -7,-7		240 Secs [==>160.0 Secs]	[1]
	3		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -7,-7		5 Secs [==>]	[1]
	4		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -7,-7		80 Secs [==>]	[1]
	5		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8860 75,-6.9430375		5 Secs [==>]	[1]
	6		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8860 75,-6.9430375		80 Secs [==>]	[1]
	7		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F450W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8860 75,-6.9430375		10 Secs [==>]	[1]
	8		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F450W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8860 75,-6.9430375		240 Secs [==>160.0 Secs]	[1]
	9		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F450W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8291 125,-6.8291125		10 Secs [==>]	[1]
	10		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F450W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8291 125,-6.8291125		240 Secs [==>260.0 Secs]	[1]
	11		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8291 125,-6.8291125		5 Secs [==>]	[1]
12		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8291 125,-6.8291125		80 Secs [==>]	[1]	



Proposal 11553 - Visit 02 - HST Imaging of the Luminous Transient in NGC 300

Fri Aug 15 01:09:12 GMT 2008

Visit	Proposal 11553, Visit 02, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: BETWEEN 01-SEP-2008:00:00:00 AND 30-SEP-2008:00:00:00									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	NGC300-TRANSIENT Alt Name1: NGC300-OT	RA: 00 54 34.5090 (13.6437875d) Dec: -37 38 31.43 (-37.64206d) Equinox: J2000			V=14+/-1	Reference Frame: ICRS			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -7,-7		160 Secs [==>]	[1]
	2		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -7,-7		160 Secs [==>]	[1]
	3		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8860 75,-6.9430375		160 Secs [==>]	[1]
	4		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8860 75,-6.9430375		160 Secs [==>]	[1]
	5		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8291 125,-6.8291125		160 Secs [==>]	[1]
	6		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.8291 125,-6.8291125		160 Secs [==>]	[1]
	7		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.9430 375,-6.886075		180 Secs [==>]	[1]
	8		(1) NGC300-TRANSIENT	WFPC2, IMAGE, PC1-FIX	F814W	ATD-GAIN=7; CR-SPLIT=NO	POS TARG -6.9430 375,-6.886075		180 Secs [==>]	[1]

