



15693 - The late-time NIR light curve of SN 2018gv

Cycle: 26, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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|------------------------------------|---------------------------------------|---------------------------------|
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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-2018GV | WFC3/IR WFC3/UVIS | 1 | 23-Apr-2019 14:00:37.0 | yes |
| 02 | (1) SN-2018GV | WFC3/IR WFC3/UVIS | 1 | 23-Apr-2019 14:00:38.0 | yes |
| 03 | (1) SN-2018GV | WFC3/IR WFC3/UVIS | 1 | 23-Apr-2019 14:00:39.0 | yes |
| 05 | (1) SN-2018GV | WFC3/IR WFC3/UVIS | 1 | 23-Apr-2019 14:00:40.0 | yes |

4 Total Orbits Used

ABSTRACT

We ask for 4 orbits of WFC3 to complete observations of the Type Ia supernova (SN Ia) 2018gv conducted by HST program GO-15145. SNe Ia have long been used to measure extragalactic distances and constrain the cosmological parameters. However, the nature of their progenitors remains

elusive, which adds a systematic uncertainty to their use as standard candles. Recently, late-time observations of SNe Ia (>500 days after maximum light) have provided a new diagnostic of SN Ia progenitor, explosion, and nebular physics. Here, we ask for 4 orbits of WFC3 to complete observe SN 2018gv out to 700 days past maximum light and explore its NIR light curve.

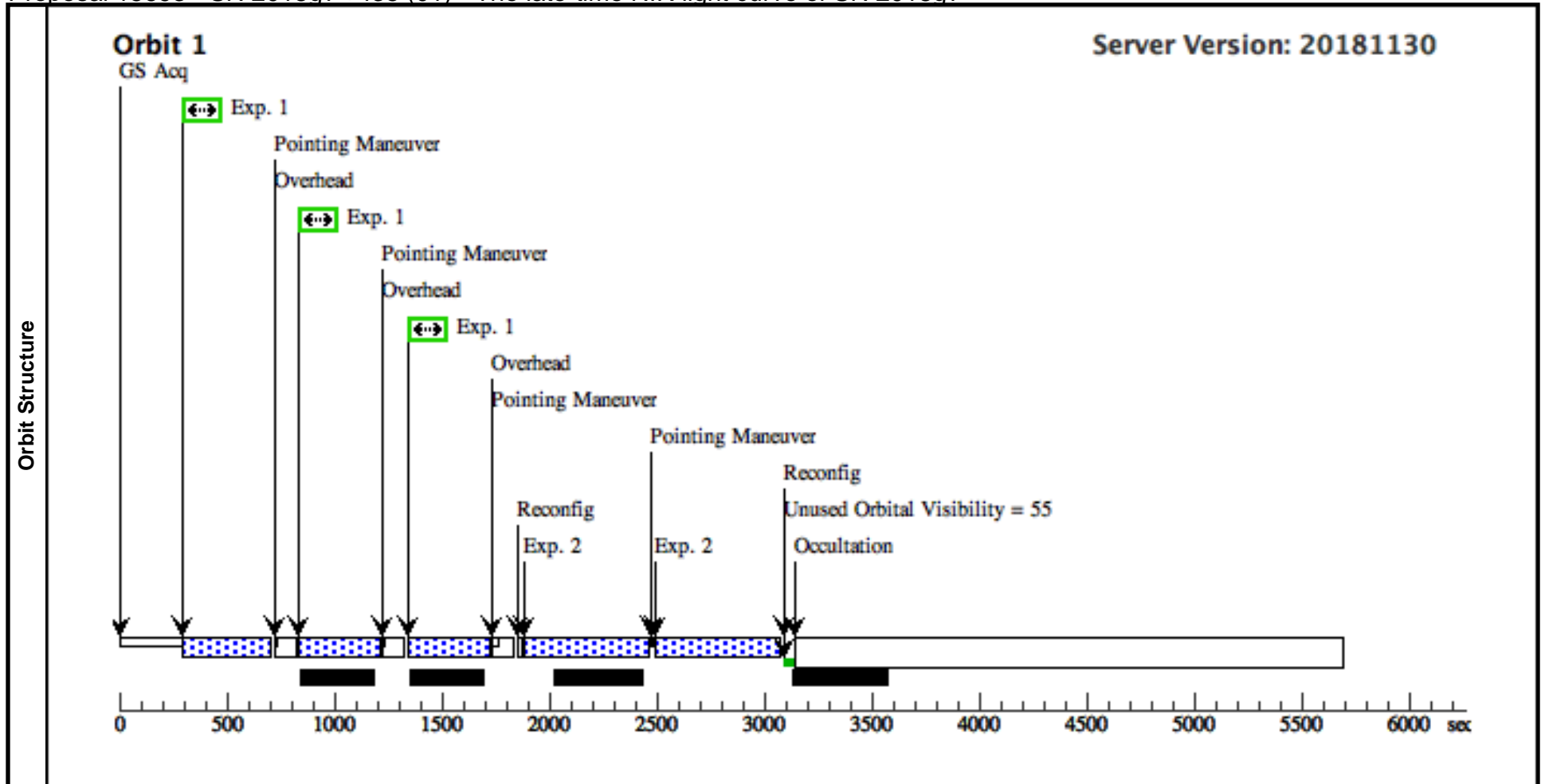
OBSERVING DESCRIPTION

We will visit SN 2018gv four times, with a cadence of 50-100 days. In each visit, we will image the SN with one orbit, split between F350LP and F160W. For the F350LP portion, we will use the WFC3-UVIS-DITHER-LINE-3PT dithering pattern; for the F160W portion - the WFC3-IR-DITHER-LINE pattern.

Proposal 15693 - SN 2018gv +435 (01) - The late-time NIR light curve of SN 2018gv

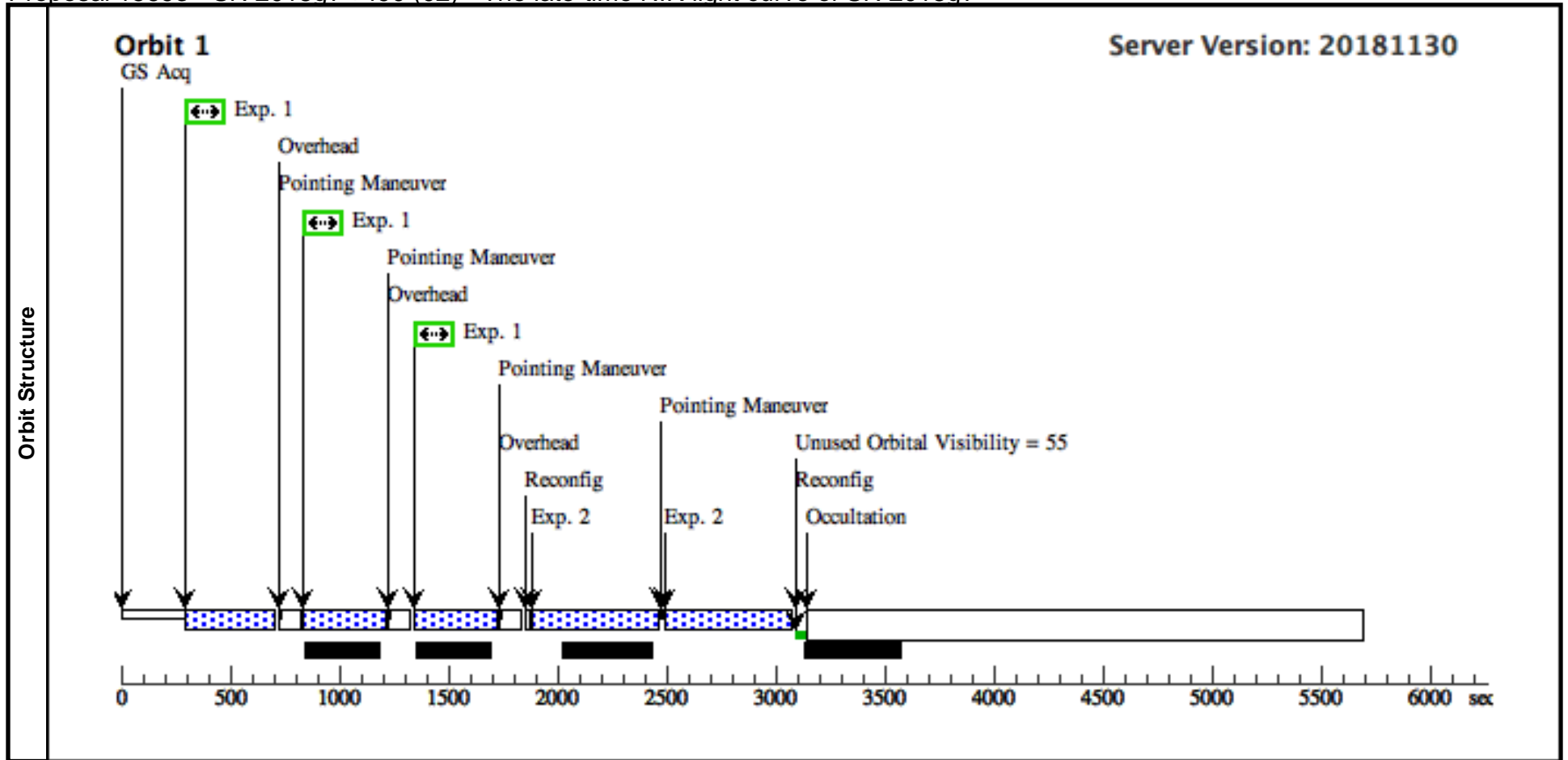
Tue Apr 23 18:00:40 GMT 2019

| Visit | Proposal 15693, SN 2018gv +435 (01), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 10-APR-2019:00:00:00 AND 14-APR-2019:00:00:00 | | | | | | | | | |
|--|--|--|---|--------------------------|---------------|-----------------------------------|---------------|---|---|--|
| | Patterns | # | Primary Pattern | Secondary Pattern | Exposures | | | | | |
| (2) | | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | (1) | | | | | |
| (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 | | (2) | | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | SN-2018GV | RA: 08 05 34.6104 (121.3942100d) Dec: -11 26 16.30 (-11.43786d) Equinox: J2000 | | V=19 | Reference Frame: NED | | | | |
| <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> Category=EXT-STAR Description=[SUPERNOVA TYPE IA] Extended=NO | | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (1) SN-2018GV | WFC3/UVIS, ACCUM, UVIS1 | F350LP | | | | Pattern 2, Exps 1-1 in SN 2018gv +435 (01) (2) | 380 Secs (1140 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] |
| 2 | | (1) SN-2018GV | WFC3/IR, MULTIACCUM, IR-UVIS | F160W | | NSAMP=12; SAMP-SEQ=SPAR S50 | | Pattern 3, Exps 2-2 in SN 2018gv +435 (01) (3) | 552.937252 Secs (1105.875 Secs) [==>(Pattern 1)] [==>(Pattern 2)] | [1] |



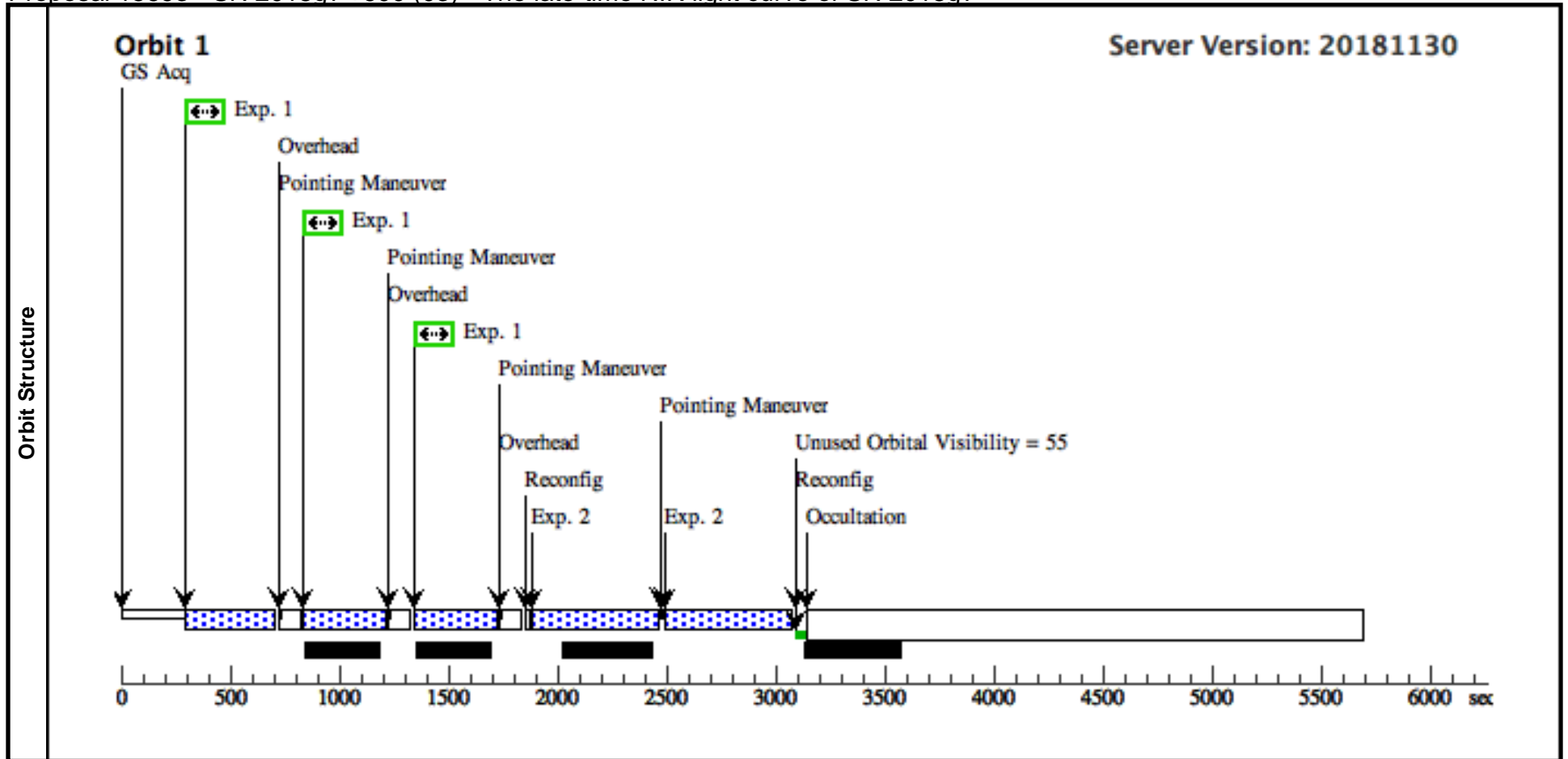
Proposal 15693 - SN 2018gv +490 (02) - The late-time NIR light curve of SN 2018gv

| Visit | | Proposal 15693, SN 2018gv +490 (02), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: ORIENT 121D TO 132 D; BETWEEN 04-JUN-2019:00:00:00 AND 08-JUN-2019:00:00:00 | | | | | Tue Apr 23 18:00:40 GMT 2019 | | | |
|--|---|---|--|--------------------------|---------------|-----------------------------------|--|--|--|-------|
| Patterns | # | Primary Pattern | Secondary Pattern | | | Exposures | | | | |
| | (2) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | | (1) | | | | |
| (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 | | | | (2) | | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | SN-2018GV | RA: 08 05 34.6104 (121.3942100d) Dec: -11 26 16.30 (-11.43786d) Equinox: J2000 | | V=19 | Reference Frame: NED | | | | |
| <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> Category=EXT-STAR Description=[SUPERNOVA TYPE IA] Extended=NO | | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (1) SN-2018GV | WFC3/UVIS, ACCUM, UVIS | F350LP | | POS TARG 40.3622 627083703,-32.8925 4764462549 | Pattern 2, Exps 1-1 i n SN 2018gv +490 (02) (2) | 380 Secs (1140 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] | [1] |
| 2 | | (1) SN-2018GV | WFC3/IR, MULTIACCUM, IR-UVIS | F160W | | NSAMP=12; SAMP-SEQ=SPAR S50 | POS TARG 40.4376 4828574987,-32.799 825344221695 | Pattern 3, Exps 2-2 i n SN 2018gv +490 (02) (3) | 552.937252 Secs (1105.875 Secs) [==>(Pattern 1)] [==>(Pattern 2)] | [1] |



Proposal 15693 - SN 2018gv +600 (03) - The late-time NIR light curve of SN 2018gv

| Visit | | Proposal 15693, SN 2018gv +600 (03), implementation Tue Apr 23 18:00:40 GMT 2019 | | | | | | | | |
|--|-----|---|---|--------------------------|---------------|-----------------------------------|--|--|--|-------|
| | | Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: ORIENT 258D TO 269 D; BETWEEN 22-SEP-2019:00:00:00 AND 26-SEP-2019:00:00:00 | | | | | | | | |
| Patterns | # | Primary Pattern | | Secondary Pattern | | Exposures | | | | |
| | (2) | Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | (1) | | | | |
| | (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 | | | (2) | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | SN-2018GV | RA: 08 05 34.6104 (121.3942100d) Dec: -11 26 16.30 (-11.43786d) Equinox: J2000 | | V=19 | Reference Frame: NED | | | | |
| <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> Category=EXT-STAR Description=[SUPERNOVA TYPE IA] Extended=NO | | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (1) SN-2018GV | WFC3/UVIS, ACCUM, UVIS | F350LP | | POS TARG -34.736 091978917386,-37.2 7656218641934 | Pattern 2, Exps 1-1 in SN 2018gv +600 (03) (2) | 380 Secs (1140 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] | [1] |
| 2 | | (1) SN-2018GV | WFC3/IR, MULTIACCUM, IR-UVIS | F160W | | NSAMP=12; SAMP-SEQ=SPAR S50 | POS TARG -34.650 446832694215,-37.3 56187020364246 | Pattern 3, Exps 2-2 in SN 2018gv +600 (03) (3) | 552.937252 Secs (1105.875 Secs) [==>(Pattern 1)] [==>(Pattern 2)] | [1] |



Proposal 15693 - SN 2018gv +700 (05) - The late-time NIR light curve of SN 2018gv

| Visit | | Proposal 15693, SN 2018gv +700 (05), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: ORIENT 310D TO 330 D; BETWEEN 31-DEC-2019:00:00:00 AND 04-JAN-2020:00:00:00 | | | | | Tue Apr 23 18:00:41 GMT 2019 | | | |
|--|---|---|--|--------------------------|---------------|-----------------------------------|---|--|--|-------|
| Patterns | # | Primary Pattern | Secondary Pattern | Exposures | | | | | | |
| | (2) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | (1) | | | | | | |
| (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 | | (2) | | | | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | SN-2018GV | RA: 08 05 34.6104 (121.3942100d) Dec: -11 26 16.30 (-11.43786d) Equinox: J2000 | | V=19 | Reference Frame: NED | | | | |
| <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> Category=EXT-STAR Description=[SUPERNOVA TYPE IA] Extended=NO | | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (1) SN-2018GV | WFC3/UVIS, ACCUM, UVIS | F350LP | | POS TARG -26.319 76002724051,27.199 44123215423 | Pattern 2, Exps 1-1 i n SN 2018gv +700 (05) (2) | 380 Secs (1140 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] | [1] |
| 2 | | (1) SN-2018GV | WFC3/IR, MULTIACCUM, IR-UVIS | F160W | | NSAMP=12; SAMP-SEQ=SPAR S50 | POS TARG -26.382 116306780237,27.13 89629574982 | Pattern 3, Exps 2-2 i n SN 2018gv +700 (05) (3) | 552.937252 Secs (1105.875 Secs) [==>(Pattern 1)] [==>(Pattern 2)] | [1] |

