



15210 - The extremes of protostellar jets: Resolving the hot jet of Sz 102

Cycle: 25, Proposal Category: GO

(UV Initiative)

(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) V-V1190-SCO WAVE | STIS/CCD STIS/FUV-MAMA | 2 | 29-May-2020 12:00:23.0 | yes |

| <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> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 51 | (1) V-V1190-SCO WAVE | STIS/CCD STIS/FUV-MAMA | 1 | 29-May-2020 12:00:24.0 | yes |
| 54 | (1) V-V1190-SCO WAVE | STIS/CCD STIS/FUV-MAMA | 1 | 29-May-2020 12:00:25.0 | yes |
| 02 | (1) V-V1190-SCO | STIS/CCD | 3 | 29-May-2020 12:00:27.0 | yes |
| 52 | (1) V-V1190-SCO WAVE | STIS/CCD | 1 | 29-May-2020 12:00:28.0 | yes |
| 56 | (1) V-V1190-SCO WAVE | STIS/CCD | 1 | 29-May-2020 12:00:29.0 | yes |
| 58 | (1) V-V1190-SCO WAVE | STIS/CCD | 1 | 29-May-2020 12:00:29.0 | yes |
| 57 | (1) V-V1190-SCO WAVE | STIS/CCD | 1 | 29-May-2020 12:00:30.0 | yes |

11 Total Orbits Used

ABSTRACT

Jets and outflows from young stellar objects are a fundamental ingredient of star formation. Studies of these jets focused mainly on low temperature plasma tracers ($T \sim 1e4$ K). However, there is increasing evidence for a new jet component at much higher temperatures unpredicted by theory. In particular, the jet of the classical T Tauri star DG Tau shows stationary X-ray emission ($T > 1e6$ K plasma) close to the driving source that is mirrored in intermediate temperature C IV emission ($T \sim 1e5$ K plasma). Several other sources show jet emission from highly ionized species resembling various aspects of the well studied DG Tau system. Different models were developed that explain individual systems, but do not provide a comprehensive picture that can be generally applied.

We propose STIS long-slit spectroscopy to characterize the spatial distribution and kinematics of the intermediate temperature jet of Sz 102. The Sz 102 jet shines even brighter in $1e5$ K plasma tracers than the famous DG Tau jet. The proposed observations allow us to study similarities and differences between Sz 102 and DG Tau as well as to test various models that predict different spatial morphologies. The proposed observations allow us to check if the intermediate/high temperature jet plasma is caused by a general process that has been overlooked in previous studies tracing only the low temperature part of these jets.

OBSERVING DESCRIPTION

The aim of this program is to resolve the jet (HH 228) spatially as well as in velocity space, and we will use HST STIS long-slit observations with the slit oriented along the jet. The position angle of the jet is known from previous observations to be 98 deg (E of N), which implies an ORIENT constraint, i.e., ORIENT=143+-1 deg or ORIENT=323+-1 deg.

We will use four different settings in two visits:

Visit 1 (FUV):

a) Two orbits with the G140M grating (central wavelength 1540 AA) targeting the C IV doublet in the FUV

Visit 2 (optical):

b) One orbit with the G430M grating (central wavelength 4961 AA) targeting [O III] at $\lambda = 5007$ AA

c) One orbit with the G430L grating targeting [Ne III] at $\lambda = 3869$ AA (only spatial information)

d) One orbit with the G750M (central wavelength 6581 AA) targeting the classical optical diagnostic jet lines

In total, we will use five orbits split into two visits (two for the FUV part, three for the optical part) so that FUV and optical observations are not mixed. We ensure that both visits are executed within about one month through a "GROUP WITHIN" statement. In addition, we use the dither pattern STIS-ALONG-SLIT to improve the removal of hot pixel.

We expect that two guide stars will be available from inspection of previous programs on this target, so that no re-acquisitions are needed between the orbits.

All exposure times are based on the available HST data, which exist for all setting used in this program from various previous programs.

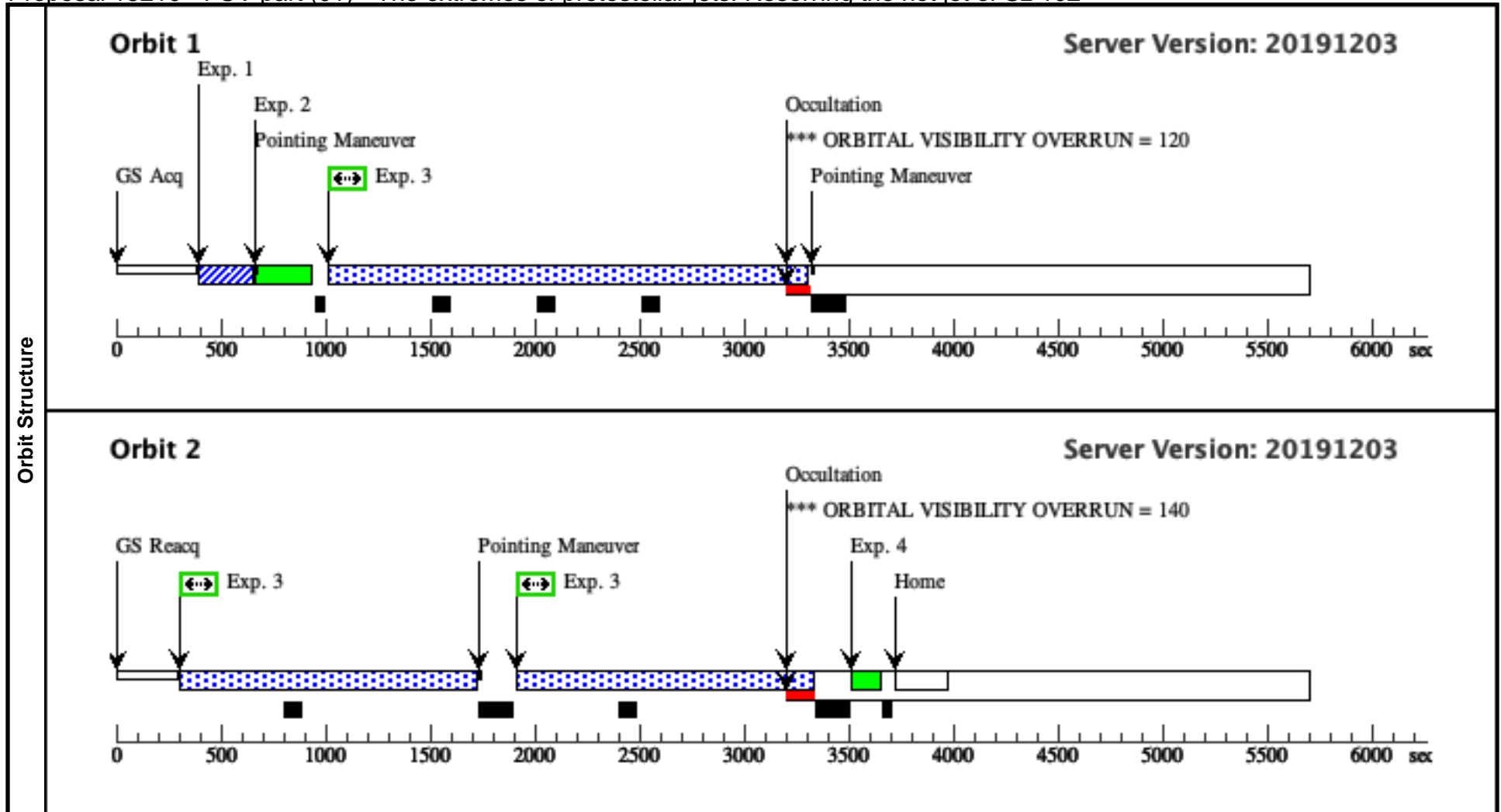
Detector safety:

The STIS MAMA exposure will not violate the brightness limits of the detector as the expected local count-rate (<0.1 counts/pix/s) is far below the limit and the source extension is too small (<1 arcsec) to increase the global count-rate to values near the limit (see also the ETC run provided for this exposure that is based on a previously observed COS spectrum).

Proposal 15210 - FUV part (01) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

Fri May 29 16:00:31 GMT 2020

| | | | | | | | | | | | |
|---|---|--|---|---------------------------------|--|-----------------------|----------------------|--|--|--------------|-----|
| Visit | Proposal 15210, FUV part (01), failed Diagnostic Status: Warning Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: ORIENT 142D TO 144 D; ORIENT 322D TO 326 D; GROUP 01,02 WITHIN 30D <i>Comments: This visit is dedicated to the FUV C IV observations. The ORIENT value is given by the PA of the jet (=98 deg. East of North). This gives ORIENT = 143 or 323 and we allow a tolerance of +- 1 deg.</i> | | | | | | | | | | |
| | Diagnosics (FUV part (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (FUV part (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN | | | | | | | | | | |
| Patterns | # | Primary Pattern | | Secondary Pattern | Exposures | | | | | | |
| | (1) | Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=3 Point Spacing=0.7 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false | | (3) | | | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | | |
| | (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | V=15.91 the total C IV flux is 8e-14 erg/s/cm ² measured from a previous COS observation | Reference Frame: ICRS | | | | | |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.</i> Further target information in https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf Category=STAR Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR] Extended=NO | | | | | | | | | | | |
| Exposures | # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit | |
| | 1 | ACQ (STIS.ta.1010956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) [==>] | [1] | |
| | <i>Comments: Stellar magnitudes from Simbad. Also, the exposure time is compatible with extrapolations based on other successful STIS ACQs of classical T Tauri stars.</i> | | | | | | | | | | |
| | 2 | First Wavecal | WAVE | STIS/FUV-MAMA, ACCUM, 52X0.2 | G140M 1540 A | | | | | [==>] | [1] |
| | <i>Comments: GO wavecal with the same central wavelength and slit width as the science exposure.</i> | | | | | | | | | | |
| 3 | C IV exposure (STIS.sp.1011228) | (1) V-V1190-SCO | STIS/FUV-MAMA, TIME-TAG, 52X0.2 | G140M 1540 A | BUFFER-TIME=500; WAVECAL=NO | | | Pattern 1, Exps 3-3 in FUV part (01) (1) | 10000 Secs (5078 Secs) [==>2278.0 Secs (Pattern 1)] [==>1400.0 Secs (Pattern 2)] [==>1400.0 Secs (Pattern 3)] | [1] [2] | |
| <i>Comments: Input spectrum for ETC is from the COS spectrum of this source, and most likely includes the entire FUV emission from the source (data from PropID 11616, specifically lb6b59rkq, lb6b59rmq, and lb6b59roq).</i> | | | | | | | | | | | |
| 4 | Second Wavecal (in occultation) | WAVE | STIS/FUV-MAMA, ACCUM, 52X0.2 | G140M 1540 A | | | | | [==>] | [2] | |
| <i>Comments: GO wavecal with the same central wavelength and slit width as the science exposure.</i> | | | | | | | | | | | |



Proposal 15210 - FUV part (1/2) (51) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

Fri May 29 16:00:31 GMT 2020

Visit
Proposal 15210, FUV part (1/2) (51), completed
Diagnostic Status: No Diagnostics
 Scientific Instruments: STIS/CCD, STIS/FUV-MAMA
 Special Requirements: ORIENT 141D TO 145 D; ORIENT 321D TO 326 D; GROUP 51,52,54,56,57 WITHIN 30D
Comments: This visit is dedicated to the FUV C IV observations. The ORIENT value is given by the PA of the jet (=98 deg. East of North). This gives ORIENT = 143 or 323 and we allow a tolerance of +/- 1 deg.

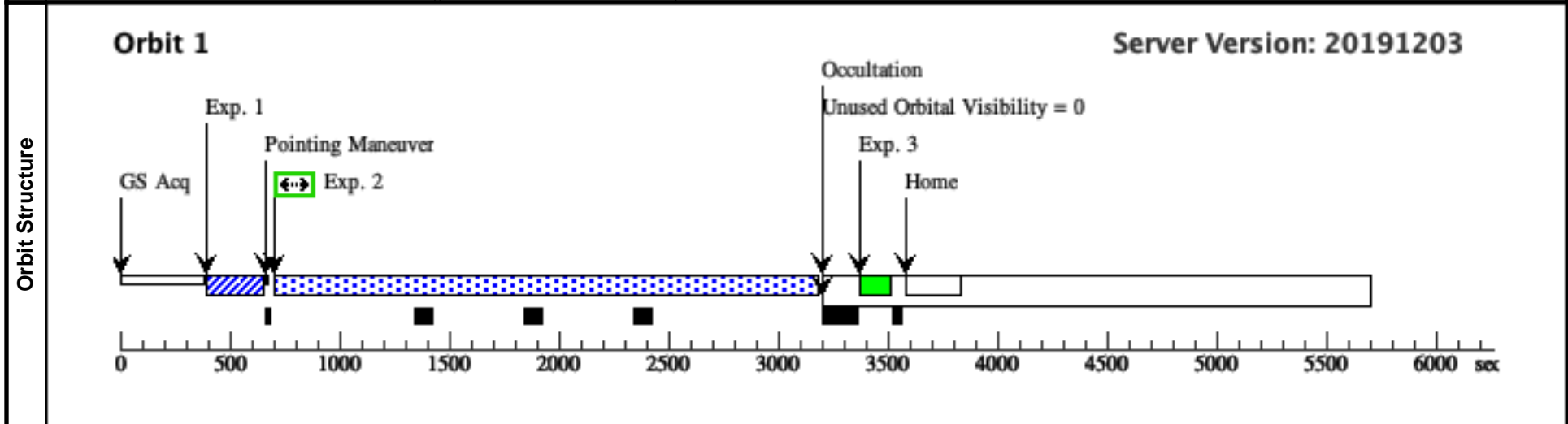
Fixed Targets

| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|-----|----------------------------------|--|--------------------------|---|-----------------------|
| (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | V=15.91 the total C IV flux is 8e-14 erg/s/cm^2 measured from a previous COS observation | Reference Frame: ICRS |

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.
 Further target information in <https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf>
 Category=STAR
 Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR]
 Extended=NO

Exposures

| # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|----------------------------------|-----------------|---------------------------------|---------------|---------------------------------|---------------|--------|--|-------|
| 1 | ACQ (STIS.ta.101 0956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) [==>] | [1] |
| <i>Comments: Stellar magnitudes from Simbad. Also, the exposure time is compatible with extrapolations based on other successful STIS ACQs of classical T Tauri stars.</i> | | | | | | | | | |
| 2 | C IV exposure (STIS.sp.10 11228) | (1) V-V1190-SCO | STIS/FUV-MAMA, TIME-TAG, 52X0.2 | G140M 1540 A | BUFFER-TIME=50 0; WAVECAL=NO | | | 2700 Secs (2327 Secs) [==>2327.0 Secs] | [1] |
| <i>Comments: Input spectrum for ETC is from the COS spectrum of this source, and most likely includes the entire FUV emission from the source (data from PropID 11616, specifically lb6b59rkq, lb6b59rmq, and lb6b59roq).</i> | | | | | | | | | |
| 3 | Wavecal (in occultation) | WAVE | STIS/FUV-MAMA, ACCUM, 52X0.2 | G140M 1540 A | | | | [==>] | [1] |
| <i>Comments: GO wavecal with the same central wavelength and slit width as the science exposure.</i> | | | | | | | | | |



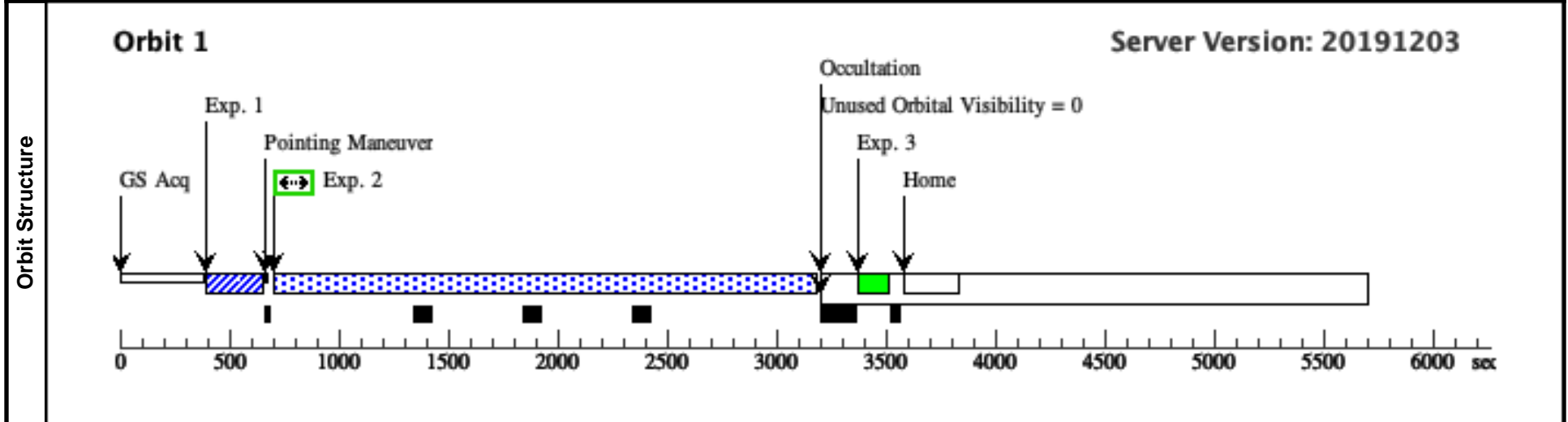
Proposal 15210 - FUV (part 2/2) (54) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

Fri May 29 16:00:31 GMT 2020

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|--------------|--|--|--|--|--|
| Visit | Proposal 15210, FUV (part 2/2) (54), completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: ORIENT 141D TO 144 D; ORIENT 321D TO 326 D; GROUP 54,51,52,56,57 WITHIN 30D <i>Comments: This visit is dedicated to the FUV C IV observations. The ORIENT value is given by the PA of the jet (=98 deg. East of North). This gives ORIENT = 143 or 323 and we allow a tolerance of +/- 1 deg.</i> | | | | |
| | | | | | |

| | | | | | | |
|---|-----|----------------------------------|--|--------------------------|---|-----------------------|
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
| | (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | V=15.91 the total C IV flux is 8e-14 erg/s/cm^2 measured from a previous COS observation | Reference Frame: ICRS |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.</i> Further target information in https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf Category=STAR Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR] Extended=NO | | | | | | |

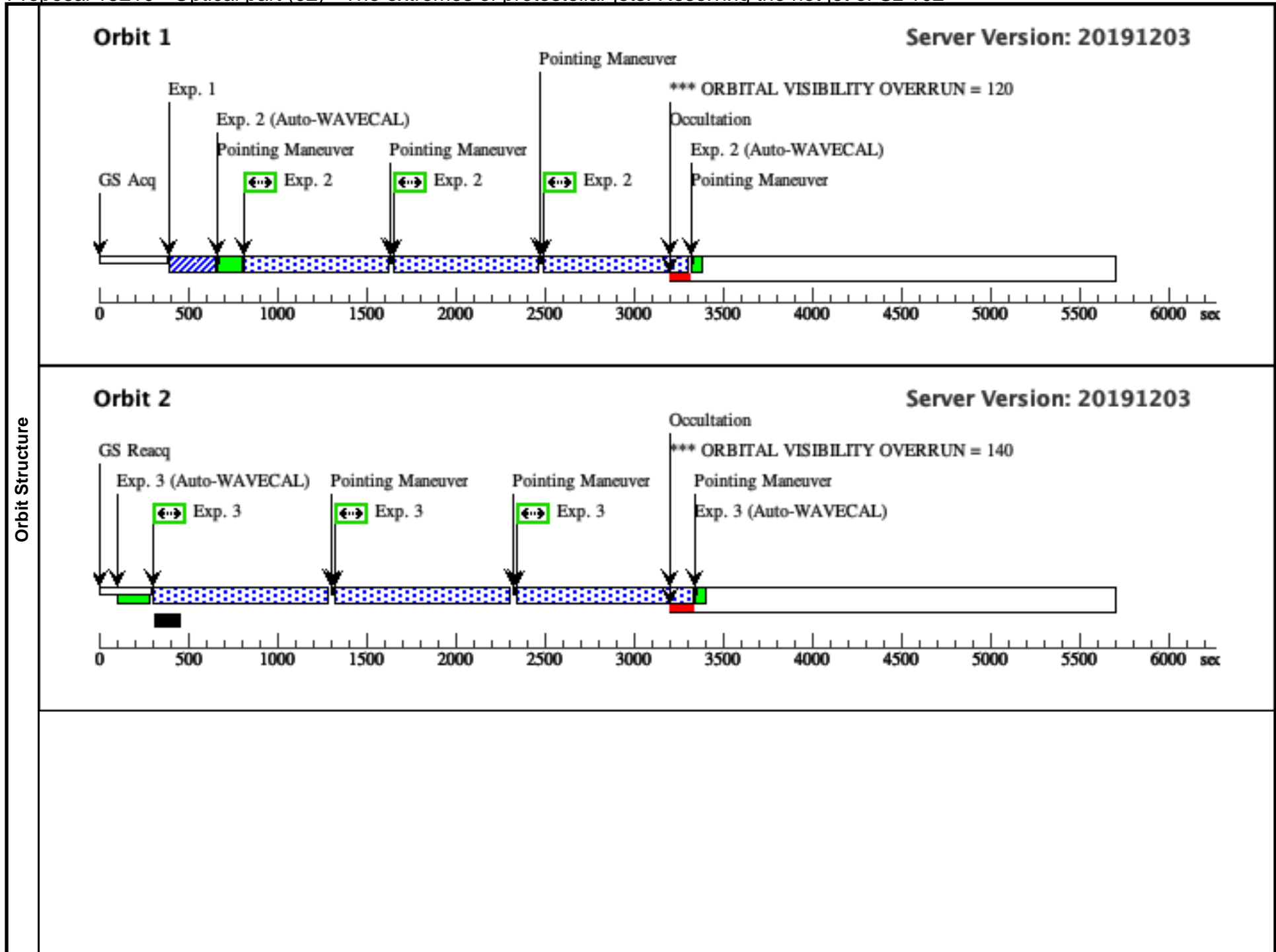
| # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|----------------------------------|-----------------|---------------------------------|---------------|---------------------------------|---------------|--------|--|-------|
| 1 | ACQ (STIS.ta.101 0956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) [==>] | [1] |
| <i>Comments: Stellar magnitudes from Simbad. Also, the exposure time is compatible with extrapolations based on other successful STIS ACQs of classical T Tauri stars.</i> | | | | | | | | | |
| 2 | C IV exposure (STIS.sp.10 11228) | (1) V-V1190-SCO | STIS/FUV-MAMA, TIME-TAG, 52X0.2 | G140M 1540 A | BUFFER-TIME=50 0; WAVECAL=NO | | | 2700 Secs (2327 Secs) [==>2327.0 Secs] | [1] |
| <i>Comments: Input spectrum for ETC is from the COS spectrum of this source, and most likely includes the entire FUV emission from the source (data from PropID 11616, specifically lb6b59rkq, lb6b59rmq, and lb6b59roq).</i> | | | | | | | | | |
| 3 | Wavecal (in occultation) | WAVE | STIS/FUV-MAMA, ACCUM, 52X0.2 | G140M 1540 A | | | | [==>] | [1] |
| <i>Comments: GO wavecal with the same central wavelength and slit width as the science exposure.</i> | | | | | | | | | |

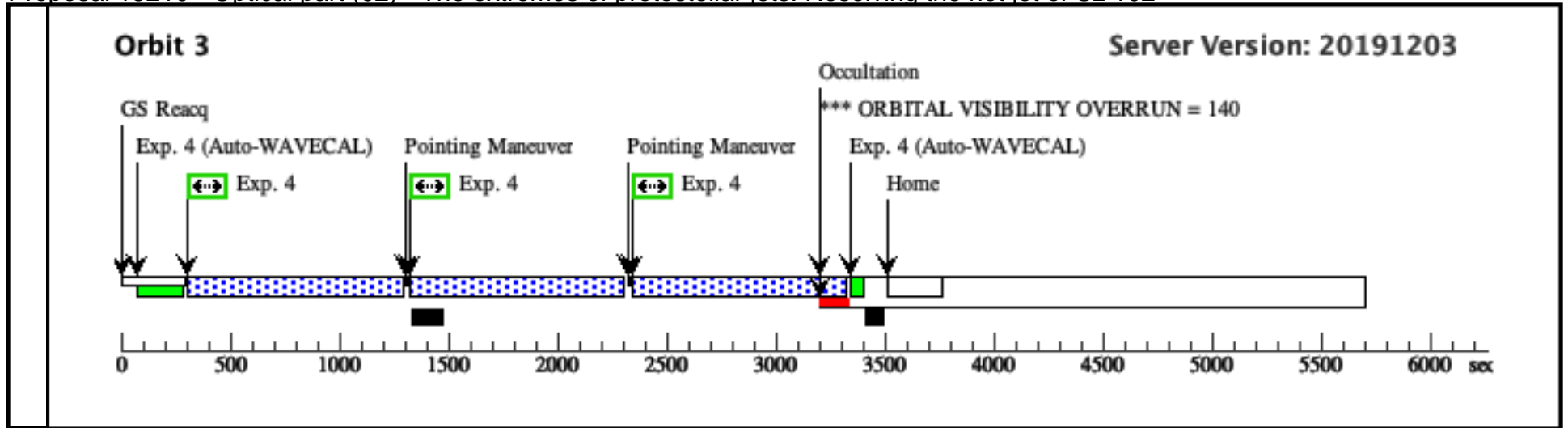


Proposal 15210 - Optical part (02) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

Fri May 29 16:00:31 GMT 2020

| | | | | | | | | | | | |
|---|---|--|--|---|----------------------|--|--|--|---|---|--------------|
| Visit | Proposal 15210, Optical part (02), failed Diagnostic Status: Warning Scientific Instruments: STIS/CCD Special Requirements: SAME ORIENT AS 01; GROUP 02,01 WITHIN 30D | | | | | | | | | | |
| | (Optical part (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Optical part (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Optical part (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN | | | | | | | | | | |
| Diagnosics | | | | | | | | | | | |
| | | | | | | | | | | | |
| Patterns | # | Primary Pattern | | | | Secondary Pattern | | | | Exposures | |
| | (1) | Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=3 Point Spacing=0.7 Line Spacing= | | Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false | | | | | | (2), (3), (4) | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | | | |
| | (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | | V=15.91 the total C IV flux is 8e-14 erg/s/cm ² measured from a previous COS observation | Reference Frame: ICRS | | | | |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.</i> Further target information in https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf Category=STAR Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR] Extended=NO | | | | | | | | | | | |
| Exposures | # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | | Orbit |
| | 1 | ACQ (STIS.ta.101 0956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) | | |
| | <i>Comments: Same as for visit 1 (the FUV part)</i> | | | | | | | | | | |
| | 2 | [Ne III] | (1) V-V1190-SCO | STIS/CCD, ACCUM, 52X0.2 | G430L 4300 A | CR-SPLIT=NO | | Pattern 1, Exps 2-2 in Optical part (02) (1) | 2000 Secs (2311 Secs) | | |
| | | | | | | | | | | [==>770.0 Secs (Pattern 1)] [==>770.0 Secs (Pattern 2)] [==>771.0 Secs (Pattern 3)] | [1] |
| 3 | [O III] | (1) V-V1190-SCO | STIS/CCD, ACCUM, 52X0.2 | G430M 4961 A | CR-SPLIT=NO | | Pattern 1, Exps 3-3 in Optical part (02) (1) | 2800 Secs (2848 Secs) | | | |
| | | | | | | | | | [==>949.0 Secs (Pattern 1)] [==>949.0 Secs (Pattern 2)] [==>950.0 Secs (Pattern 3)] | [2] | |
| 4 | Standard jet lines | (1) V-V1190-SCO | STIS/CCD, ACCUM, 52X0.2 | G750M 6581 A | CR-SPLIT=NO | | Pattern 1, Exps 4-4 in Optical part (02) (1) | 800 Secs (2848 Secs) | | | |
| | | | | | | | | | [==>950.0 Secs (Pattern 1)] [==>949.0 Secs (Pattern 2)] [==>949.0 Secs (Pattern 3)] | [3] | |

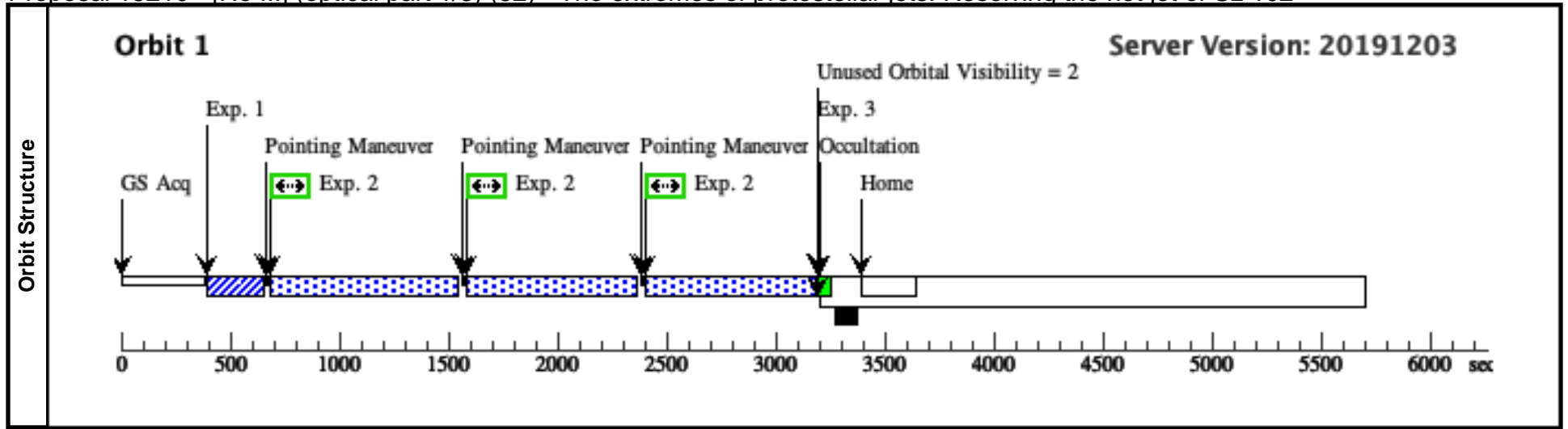




Proposal 15210 - [Ne III] (optical part 1/3) (52) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

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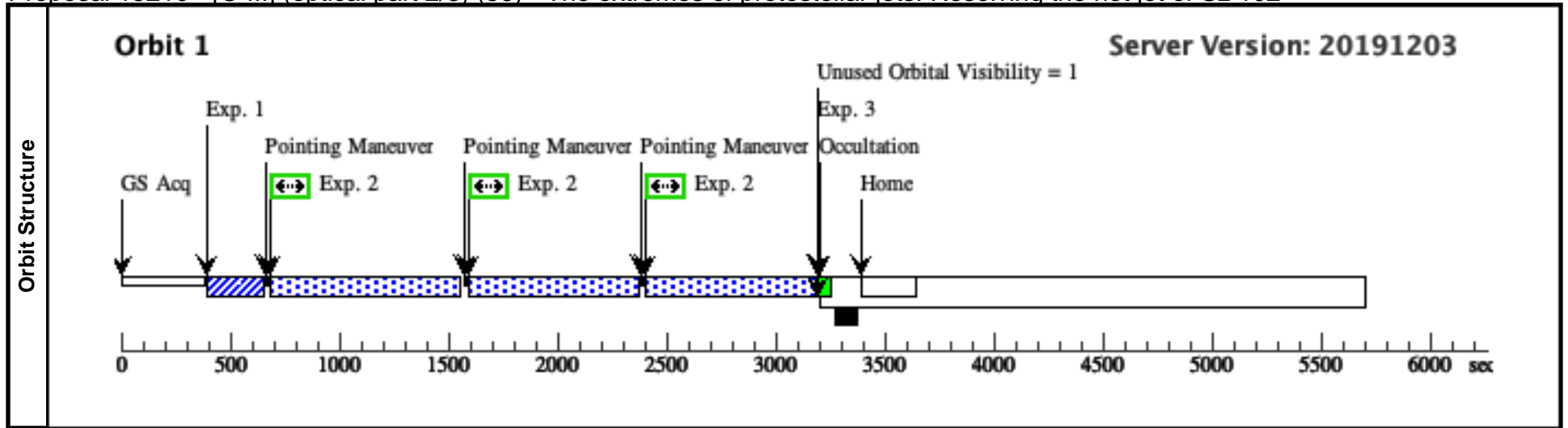
| Visit | Proposal 15210, [Ne III] (optical part 1/3) (52), completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD Special Requirements: ORIENT 141D TO 144 D; ORIENT 321D TO 326 D; GROUP 52,51,54,56,57 WITHIN 30D | | | | | | | | | |
|---------------|---|----------------------------------|---|--|--|----------------------------|---------------|---|--|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | |
| | | (2) | Pattern Type=LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.7 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=270 Angle Between Sides= Center Pattern=false | | | | | | (2) |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | V=15.91 the total C IV flux is 8e-14 erg/s/cm ² measured from a previous COS observation | Reference Frame: ICRS | | | | |
| | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.</i> Further target information in https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf Category=STAR Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR] Extended=NO | | | | | | | | | |
| Exposures | # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | ACQ (STIS.ta.101 0956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) [==>] | [1] |
| | <i>Comments: Same as for visit 1 (the FUV part)</i> | | | | | | | | | |
| | 2 | [Ne III] | (1) V-V1190-SCO | STIS/CCD, ACCUM, 52X0.2 | G430L 4300 A | CR-SPLIT=NO; WAVECAL=NO | | Pattern 2, Exps 2-2 in [Ne III] (optical part 1/3) (52) (2) | 2000 Secs (2241 Secs) [==>747.0 Secs (Pattern 1)] [==>747.0 Secs (Pattern 2)] [==>747.0 Secs (Pattern 3)] | [1] |
| | 3 | | WAVE | STIS/CCD, ACCUM, 52X0.2 | G430L 4300 A | | | | [==>] | [1] |



Proposal 15210 - [O III] (optical part 2/3) (56) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

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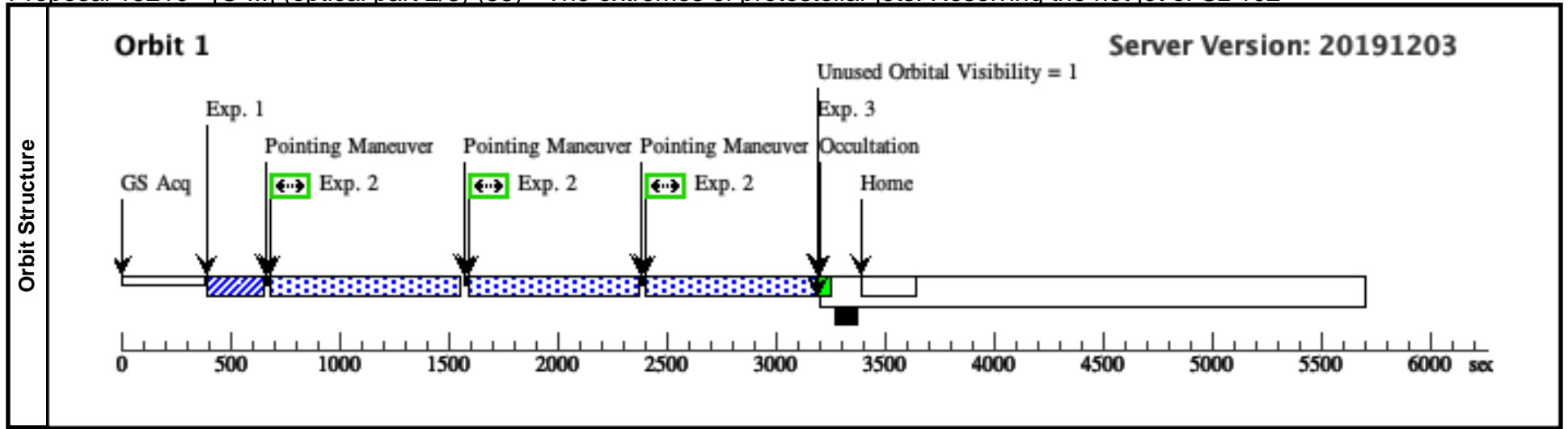
| Visit | Proposal 15210, [O III] (optical part 2/3) (56), failed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD Special Requirements: ORIENT 141D TO 145 D; ORIENT 321D TO 326 D; GROUP 56,51,52,54,57 WITHIN 30D | | | | | | | | | |
|---------------|---|----------------------------------|---|--|--|----------------------------|---------------|--|--|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | |
| | | (2) | Pattern Type=LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.7 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=270 Angle Between Sides= Center Pattern=false | | | | | | (2) |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | V=15.91 the total C IV flux is 8e-14 erg/s/cm ² measured from a previous COS observation | Reference Frame: ICRS | | | | |
| | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.</i> Further target information in https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf Category=STAR Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR] Extended=NO | | | | | | | | | |
| Exposures | # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | ACQ (STIS.ta.101 0956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) [==>] | [1] |
| | <i>Comments: Same as for visit 1 (the FUV part)</i> | | | | | | | | | |
| | 2 | [O III] | (1) V-V1190-SCO | STIS/CCD, ACCUM, 52X0.2 | G430M 4961 A | CR-SPLIT=NO; WAVECAL=NO | | Pattern 2, Exps 2-2 in [O III] (optical part 2/3) (56) (2) | 2800 Secs (2232 Secs) [==>744.0 Secs (Pattern 1)] [==>744.0 Secs (Pattern 2)] [==>744.0 Secs (Pattern 3)] | [1] |
| | 3 | | WAVE | STIS/CCD, ACCUM, 52X0.2 | G430M 4961 A | | | [==>] | [1] | |



Proposal 15210 - [O III] (optical part 2/3) (58) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

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| Visit | Proposal 15210, [O III] (optical part 2/3) (58), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD Special Requirements: ORIENT 141D TO 145 D; ORIENT 321D TO 326 D | | | | | | | | | |
|---------------|---|----------------------------------|---|--|--|----------------------------|---------------|--|--|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | |
| | | (2) | Pattern Type=LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.7 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=270 Angle Between Sides= Center Pattern=false | | | | | | (2) |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | V=15.91 the total C IV flux is 8e-14 erg/s/cm ² measured from a previous COS observation | Reference Frame: ICRS | | | | |
| | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.</i> Further target information in https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf Category=STAR Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR] Extended=NO | | | | | | | | | |
| Exposures | # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | ACQ (STIS.ta.101 0956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) [==>] | [1] |
| | <i>Comments: Same as for visit 1 (the FUV part)</i> | | | | | | | | | |
| | 2 | [O III] | (1) V-V1190-SCO | STIS/CCD, ACCUM, 52X0.2 | G430M 4961 A | CR-SPLIT=NO; WAVECAL=NO | | Pattern 2, Exps 2-2 in [O III] (optical part 2/3) (58) (2) | 2800 Secs (2232 Secs) [==>744.0 Secs (Pattern 1)] [==>744.0 Secs (Pattern 2)] [==>744.0 Secs (Pattern 3)] | [1] |
| | 3 | | WAVE | STIS/CCD, ACCUM, 52X0.2 | G430M 4961 A | | | [==>] | [1] | |



Proposal 15210 - Standard jet lines (optical part 3/3) (57) - The extremes of protostellar jets: Resolving the hot jet of Sz 102

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| | | | | | | | | | | | |
|---|---|---|--|---------------------------------|----------------------|--|--------------------------|---|---|------------------|--|
| Visit | Proposal 15210, Standard jet lines (optical part 3/3) (57), completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD Special Requirements: ORIENT 141D TO 145 D; ORIENT 321D TO 326 D; GROUP 57,51,52,54,56 WITHIN 30D | | | | | | | | | | |
| | Patterns | # | Primary Pattern | | | | Secondary Pattern | | | Exposures | |
| (2) | | Pattern Type=LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.7 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=270 Angle Between Sides= Center Pattern=false | | | | | | (2) | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | | | |
| | (1) | V-V1190-SCO Alt Name1: SZ-102 | RA: 16 08 29.7360 (242.1239000d) Dec: -39 03 11.58 (-39.05322d) Equinox: J2000 | | | V=15.91 the total C IV flux is 8e-14 erg/s/cm ² measured from a previous COS observation | Reference Frame: ICRS | | | | |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Based on the Visit Planer information, we manually adjusted the coordinates for the anticipated observing date in April 2018. This correction is small and the coordinates are well within 0.06 arcsec from those successfully used by PropID 14177, and only 0.57 arcsec from the "standard" 2000 position, which Simbad provides.</i> Further target information in https://www.aanda.org/articles/aa/pdf/2017/04/aa29929-16.pdf Category=STAR Description=[CIRCUMSTELLAR MATTER, JET, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR] Extended=NO | | | | | | | | | | | |
| Exposures | # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit | |
| | 1 | ACQ (STIS.ta.101 0956) | (1) V-V1190-SCO | STIS/CCD, ACQ, F28X50LP | MIRROR | ACQTYPE=POINT | | | 8 Secs (8 Secs) [==>] | [1] | |
| | <i>Comments: Same as for visit 1 (the FUV part)</i> | | | | | | | | | | |
| | 2 | Standard jet lines | (1) V-V1190-SCO | STIS/CCD, ACCUM, 52X0.2 | G750M 6581 A | CR-SPLIT=NO; WAVECAL=NO | | Pattern 2, Exps 2-2 in Standard jet lines (optical part 3/3) (57) (2) | 800 Secs (2169 Secs) [==>723.0 Secs (Pattern 1)] [==>723.0 Secs (Pattern 2)] [==>723.0 Secs (Pattern 3)] | [1] | |
| 3 | | WAVE | STIS/CCD, ACCUM, 52X0.2 | G750M 6581 A | | | | [==>] | [1] | | |

