# SOAR for Astronomers/Observers

**This page is intended to provide scientists with an up to date quick glance on the instrumentation currently available on the SOAR telescope and modes of operation.**

| Instrument | Type | Wavelength Range | Field_of_View (arcmin) | Scale (arcsec/pixel) | Resolution (R) | Filters | Data Reduction |
|---|---|---|---|---|---|---|---|
| SOAR Imager (SOI) [1] | U-sensitive optical [2] imager | 310-1000nm | 5.2 x 5.2 | 0.077 | N/A | UBVRI, ugriz, ubvy, Ha, [SII], others (see Filters [3]) | IRAF Mosaic Reduction, and also PyRAF script - basic image processing |
| SOAR Adaptive Optics Module (SAM) [4] | Laser-guided optical [2] Adaptive Optics imager | 400-1000nm | 3.1 x 3.1 | 0.045 | N/A | BVRI, griz, ubvy, Ha, [SII], others (see Filters [3]) | PyRAF script - basic image processing |
| Goodman High Throughput Spectrograph [5] | High throughput optical [2]imaging spectrograph | 310-905nm | 7.2 circular | 0.15 | ~1400-10000 | **Imaging:** UBVRI, ugriz, ubvy, Ha, [SII], others (see Filters [3]) **Spectra:** GG-385, GG-455, GG-495, OG-570 | IRAF. Tutorial for reducing single slit and MOS |
| SPARTAN Near-IR Camera [6] | Near-IR [7] imager | 1-2.2 um | f/12: 5.04 x 5.04 f/21: 3.05 x 3.05 | f/12: 0.066 f/21: 0.040 | N/A | YZJHK | |
| Visitor Instrument *(Special access):* [8] HRCam [9]. Instr. Scientist: A. Tokovinin | Optical High-speed Imager | 400-1000nm | 16 x 16 arcsec | 0.01575 | N/A | BVRI | Custom IDL-based pipeline by A. Tokovinin |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Visitor Instrument - (Special Acces): [8] Fabry-Perot unit on SAM. [10] Instr. Scientist: Claudia Mendez-Oliveira | Fabry-Perot Etalon | 400-1000nm | 3.1 x 3.1 | 0.045 | 4100, 11200 | Filters for SAM-FP [11] | Custom pipeline |
| SOAR Integral-Field Unit Spectrograph (SIFS) [12] (Under Commissioning/Science Verification - SV) | Integral-Field Unit Spectrograph | 400-780nm (during SV) | 15 x 7.8 arcsec (during SV) | 0.3 arcsec/fiber (during SV) | 4200 (during SV) | -- | Custom PyRAF/MSCRED pipeline |
| Ohio State IR Imager/Spectrograph (OSIRIS) [13] RETIRED - NO LONGER AVAILABLE | Near-IR [7] imaging spectrograph | 0.9-2.2 um | f/7: 2.37 x 2.37 f/3: 5.65 x 5.65 | f/7: 0.139 f/3: 0.331 | 1200-3000 | Y (1.04um), JHK,Ks, He I (1.083um & 2.06um), Fe II (1.644um), 2.03um, BrGamma (2.17um), H2 (2.122um) | |

**OBSERVING MODES:**
SOAR offers both classical (on-site) observing [14], and remote observing [15] (for experienced users). This provides with ample scheduling flexibility, making feasible complicated programs, especially those involving sporadic time sampling, that are otherwise normally not feasible in other facilities.

**Once you have decided which instrument is best suited for your science program, the following links will help you in preparing your proposal, and later for your SOAR observing run:**

1. Preparing your proposal for requesting time with the SOAR telescope [16]
2. Preparing for your SOAR observing run: this section will tell you what you need to do for your upcoming run, depending on whether you will be coming to carry out your observations directly at the telescope, [14] or observing remotely via Internet. [15]
3. Reducing your data. [17]

Please, do not hesitate to contact us [18] if you note errors, or you consider that important information is missing.

---

**Links**
[1] http://www.ctio.noao.edu/soar/content/soar-optical-imager-soi
[2] http://www.ctio.noao.edu/soar/content/optical-instrumentation-soar
[3] http://www.ctio.noao.edu/soar/content/filters-available-soar
[4] http://www.ctio.noao.edu/soar/content/soar-adaptive-optics-module-sam
[5] http://www.ctio.noao.edu/soar/content/goodman-high-throughput-spectrograph
[6] http://www.ctio.noao.edu/soar/content/spartan-near-ir-camera

[7] http://www.ctio.noao.edu/soar/content/infrared-instrumentation-soar-0

[8] http://www.ctio.noao.edu/soar/content/access-visitor-instruments

[9] http://www.ctio.noao.edu/~atokovin/speckle/index.html

[10] http://www.ctio.noao.edu/soar/content/sam-fp

[11] http://www.ctio.noao.edu/soar/content/filters-sam-fp

[12] http://www.ctio.noao.edu/soar/content/soar-integral-field-spectrograph-sifs-call-science-verification-proposals

[13] http://www.ctio.noao.edu/soar/content/ohio-state-infrared-imagerspectrograph-osiris

[14] http://www.ctio.noao.edu/soar/content/visiting-astronomers-guide

[15] http://www.ctio.noao.edu/soar/content/soar-remote-observers-guide

[16] http://www.ctio.noao.edu/soar/content/proposing-soar

[17] http://www.ctio.noao.edu/soar/content/reducing-your-soar-data

[18] mailto:cbriceno@ctio.noao.edu?subject=Web%20page%20issue