

## MMT Observing Programs

August-December 2018

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| SAO-1  | Moran, Fabricant<br>Chilingarian  | <i>Binospec Calibration Data</i>   |
| SAO-2  | Berger, Margutti, Chornock  | <i>Magellan Follow-up of Gravitational Fong, Nicholl<br/>Wave Events</i>                   |
| SAO-3  | Berger, Eftekhari, Villar,<br>Gomez, Margutti<br>Chornock, Fong, Nicholls | <i>MMT Follow-up of Gravitational Blanchard,<br/>Wave Events</i>                           |
| SAO-4  | Brown, Kilic  | <i>Gravitational Wave Binaries</i>   |
| SAO-5  | Raymond, Boumis, Fesen<br>Caldwell  | <i>Non-Radiative Shock Waves in the old SNR G70.0-<br/>21.5</i>                            |
| SAO-6  | Sohn, Utsumi, Fabricant,<br>Diaferio, Del'Antonio, Geller                 | <i>A Complete Redshift Survey for Nearby Weak Rines,<br/>Lensing Cluster A2457</i>         |
| SAO-7  | Tacchella, Bordoloi, Naidu, Leja<br>Onodera, Chilingarian, Conroy         | <i>Transition Galaxy Survey: a Study of Quenching<br/>Galaxies</i>                         |
| SAO-8  | Bonaca, Prince-Whelan, Conroy   | <i>Three-dimensional kinematics of the GD-1 Caldwell<br/>stellar stream</i>                |
| SAO-9  | Conroy, Johnson, Cargile<br>Bonaca  | <i>The H3 Survey: The Milky Way's Stellar<br/>Halo at High Resolution with Hectochelle</i> |
| SAO-10 | Weaver, McGruder, Osip<br>Jordan, Apai, Lopez Morales                     | <i>ACCESS-North: Probing Exoplanet Atmospheres<br/>with MMT/Binospec</i>                   |
| SAO-11 | Caldwell, Bhattacharya<br>Arnaboldi                                       | <i>Kinematics of M31 Disk and Spheroid using<br/>Planetary Nebulae</i>                     |
| SAO-12 | Winston, Tolls, Hora  | <i>Spectra in the SMOG: Studying Young Stellar<br/>Clusters in the Outer Galaxy</i>        |
| SAO-13 | Naidu, Cohen, Danieli, Gu,<br>van Dokkum, Conroy                          | <i>Velocity Fields of Newly Discovered Ultra-Diffuse<br/>Galaxies</i>                      |
| SAO-14 | Douglas, Mann, Gosnell  | <i>The impact of companions on stellar rotational<br/>evolution (MMT)</i>                  |
| SAO-15 | Chilingarian, Zolotukhin,<br>Afansiev, Grishin                            | <i>Internal dynamics of recently formed ultra-diffuse<br/>galaxies</i>                     |

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| SAO-16 | Blanchard, Gomez, Nicholls, Berger   | <i>Spectroscopic and Photometric Follow-up of SLSNe and TDEs</i>  |
| SAO-17 | Macleod, Green   | <i>Spectroscopic Follow-up of X-ray-Selected Strongly Variable Quasars</i>                                  |
| SAO-18 | Blanchard, Nicholls, Berger  | <i>Spectroscopic and Photometric Follow-up of SLSNe and TDEs</i>  |
| SAO-19 | Patnaude, Weil, Fesen<br>Milisavljevic   | <i>Investigating the Nature of Cas A's Extraordinary Bipolar Jets</i>                                       |
| SAO-20 | Graur, Mandel, French<br>Guillochon, Zahid   | <i>The host galaxies of tidal disruption events</i>   |
| SAO-21 | Patnaude, Raymond, Margutti<br>Milisavljevic   | <i>Multiwavelength Observations of Supernovae</i>   |
| SAO-22 | Grindlay, Gomez  | <i>DASCH Survey for Extreme Transients and BH-LMXBs</i>   |
| SAO-23 | Benbow, Johnson, Williams  | <i>Determining Blazar Redshifts for Studies of the EBL</i>  |
| UAO-G1 | Kallivayalil, Weiner, Tollerud<br>Mao, Behroozi, Wechsler, Geha                      | <i>The SAGA Project: How Unique is the Milky Way and its Satellite Population?</i>                          |
| UAO-G2 | Kelly  | <i>Minnesota SNe Study UAO-S155 Spectroscopy of Extreme Emission Line Galaxies at <math>z \sim 2</math></i> |
| UAO-G3 | Scarlata, Mehta  | <i>Confirming the most extreme starbursts</i>   |
| UAO-G4 | Fong, Alexander, Paterson  | <i>Rapid Observations of Gamma-ray Bursts and Gravitational Wave Signals</i>                                |
| UAO-G5 | Terreran, Chornock, Milisavljevic<br>Hajela, Alexander, Coppejan<br>Miller, Margutti | <i>MMT-NU Transient Alliance</i>  |
| UAO-G6 | Johnson, Drout   | <i>Revolutionizing Red and Yellow Supergiant Sample in M31</i>  |
| UAO-G7 | Miller   | <i>Caught in the Act: Revealing the Progenitors of Type Ia Supernovae in the Hours After Explosion</i>      |
| UAO-G8 | Lim, Jang, Kim, Hong, Lee  | <i>High-resolution spectroscopy for RGB and RRL stars in the globular cluster M15</i>                       |
| UAO-G9 | Sung, J. Kim, S. Kim, Naze,<br>Rauw, Lim   | <i>Searching for Kinematic Substructure of the Core Cluster IC 1805 in the Cas OB6 Association</i>          |

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| UAO-G10  | Rakshit, Woo   | <i>Estimating black hole masses of Narrow line Seyfert 1 Galaxies using spectro-polarimetry</i>   |
| UAO-G11  | Kim, Lee, Jeong, Park, Jannuzi, Smith, Zabludoff, Yang                                   | <i>Using Polarization to Reveal the Nature of Ly<math>\alpha</math> Nebulae</i>   |
| UAO-G12  | Jiang  | <i>Constraining the Faint End of the Quasar Luminosity Function at High Redshift</i>  |
| UAO-G13  | Ulmer, Durret, Lopes, Adami  | <i>Spectroscopic follow-up of two interacting Planck galaxy clusters</i>  |
| UAO-S103 | Esplin, Luhman   | <i>Searching for Planetary-mass Brown Dwarf in Taurus</i>   |
| UAO-S104 | Ly, Malkan   | <i>Recalibrating Strong-line Metallicity Diagnostic for <math>z &gt; 1</math> Chemical Enrichment Studies with Te-based Metallicities</i> |
| UAO-S105 | Ly, Behroozi, Malkan Hayashi   | <i>Dependence of Galactic Chemical Enrichment on Environment over 7 Gyr</i>   |
| UAO-S106 | Willmer, Frye, Rieke, Kim, Koekemoer, Ashcraft, Cohen, Jansen                            | <i>NIR Imaging of the JWST North Ecliptic Pole Time Domain Field</i>  |
| UAO-S110 | Neugent, Massey  | <i>The Masses of Wolf-Rayet Stars in M31 and M33</i>  |
| UAO-S111 | Zaritsky, Hoestra, Muzzin, van der Burg, Amorisco, Sand O'Donnell, Donnerstein, Kadowaki | <i>Understanding the Origin of Ultra-Diffuse Galaxies in Clusters using MMT/Hectospec</i>   |
| UAO-S112 | Zaritsky, H3 Team, Bonaca, Conroy  | <i>The H3 Survey and the Edge of Phase Space</i>  |
| UAO-S114 | Fang, Apai, Pascucci, Kim  | <i>A spectroscopic survey of young stars in the Orion Belt and Ori regions of Orion</i>   |
| UAO-S116 | Fang, Kim  | <i>A spectroscopic survey of young stellar population of Orion</i>  |
| UAO-S121 | N. Smith, Wyatt, Bilinski, Moe Andrews, P. Smith, Matheson, Milne, Williams, Sand        | <i>AZTEC: Arizona Transient Exploration and Characterization</i>  |
| UAO-S128 | Yue, McGreer, Fan  | <i>Changing-Look Quasars from BASS/DECaLS-SDSS: A Decade-Long Baseline for Quasar State Changes</i>                                       |
| UAO-S133 | Olszewski, Belokurov, Caldwell Kopusov, Walker, Mateo                                    | <i>Dwarf Galaxies and Halo Substructure in the Gaia DR2 Era</i>   |

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| UAO-S136 | Pearce, Rockowitz, Avner<br>Krantz, Weiner  | <i>Visible spectra of space debris to study on-orbit aging and reddening</i>  |
| UAO-S141 | Zhang, Zaritsky   | <i>How is Gas Distributed in Galaxy Halos?</i>  |
| UAO-S144 | Huang, Fan  | <i>Unveiling the Monsters: Spectroscopic Confirmation and Characterization of the Most Massive Galaxies at <math>z = 3 - 4</math></i> |
| UAO-S150 | Zabludoff, Lee, Jeong,<br>Park, Jannuzi, Smith, Kim<br>Yang   | <i>Using Polarization to Reveal the Nature of Ly<math>\alpha</math> Nebulae</i>   |
| UAO-S151 | Stark, Salmon, Frye, Mainali  | <i>Toward an Understanding of the Stellar Populations and Gas Conditions in Reionization-Era Galaxies</i>                             |
| UAO-S152 | Patej, Dey, Loeb, Rozo<br>Fan, Frye   | <i>Surveying Galaxy Cluster Physics and Cosmology from the Cluster Outskirts</i>  |
| UAO-S155 | Tang, Stark   | <i>Spectroscopy of Extreme Emission Line Galaxies at <math>z \sim 2</math></i>  |
| UAO-S156 | Willmer, Cotton, Ashby, Maksym<br>Hasinger, Brisken, Frye, Cohen,<br>Rieke, Windhorst, Jansen   | <i>Identifying sources in the JWST/TDF with visible spectroscopy</i>  |
| UAO-S161 | Wagner, Woodward, Starfield   | <i>Post-Outburst Spectroscopic Evolution of Classical Novae</i>   |
| UAO-S165 | Joshi, Cohen, Rhoads, Malhotra<br>Windhorst   | <i>Tracing galaxy evolution leading up to cosmic noon - NIR spectroscopy of <math>z \sim 2</math> massive galaxies</i>                |
| UAO-S166 | Fan, Walter, Venemans,<br>Wu, Wang, Ly, Yue, Yang<br>Schindler  | <i>Exploring Early Black Hole Growth and Banados, Reionization History: A Survey of Luminous Quasars at <math>z &gt; 7</math></i>     |
| UAO-S171 | Weiner, Behroozi, Mao, Geha<br>Wechsler, Tollerud   | <i>The SAGA Project: An Efficient Search for Dwarf Galaxy Satellites Around Milky Way-like Galaxies</i>                               |
| UAO-S172 | Harris, Kikwaya, Lejoly<br>Springman, Corliss, Howell<br>Samarasinha, Mueller   | <i>A Spectral Survey for Ices and Dust in the Halo of the Hyperactive Comet 46P/Wirtanen</i>  |
| UAO-S173 | Sand, Spekkens, Frye, Corsi,<br>Christensen, Paschalidis,<br>Ozel, Behroozi, Wyatt, Paterson<br>Zabludoff, Fan, Matheson, Moe<br>Bilinski, Lundquist, Milne, Andrews<br>Williams, Smith, Fong | <i>Follow-up of Electromagnetic Counterparts to Gravitational Wave Events</i>   |

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| UAO-S176 | Kim, Allen, Apai, Eisner<br>Pascucci, Fang             | <i>Characterizing YSOs in the Heart of the Orion<br/>Nebula Cluster and NGC 1977 using MMT/MMIRS<br/>multi-object spectroscopy</i>       |
| UAO-S177 | Senchyna, Stark  | <i>Uncovering faint extremely metal-poor galaxies:<br/>windows on low-metallicity massive stars</i>                                      |
| UAO-S178 | Senchyna, Stark  | <i>Constraining X-ray binary populations with<br/>extreme high-ionization emission lines</i>   |
| UAO-S185 | Zaritsky, Zhang  | <i>Globular Clusters Throughout the Local Volume</i>   |
| UAO-S186 | Andrews, Rau, Guhathakurta<br>Levesque, Williams, Sand | <i>Discovering Red Supergiants in NGC6946</i>  |
| UAO-S187 | Kim, Fang, Herczeg, Jose                               | <i>Near-IR spectroscopic survey of young stars<br/>associated with the feedback driven star forming<br/>region AFGL333 in W3 complex</i> |
| UAO-S189 | Rackham, Osip, Lopez Morales<br>Jordan, Apai, Bixel    | <i>ACCESS: Probing Exoplanet Atmospheres and<br/>Enabling TESS Follow-up</i>   |
| UAO-S190 | Stark, Ouchi, Harikane, Tang<br>Behroozi, Endsley      | <i>MMT Spectroscopy of <math>z \sim 4 - 7</math> Galaxies: Tracing<br/>Reionization with Ly<math>\alpha</math> Emissions</i>             |
| UAO-S193 | Kim, Downes, Fang, Suarez<br>Roman-Zuniga              | <i>The Spectroscopic Initial Mass Function of a Young<br/>Star Cluster that Just Evolved from its Parental<br/>Cloud (III)</i>           |
| UAO-S194 | Bender, Johnson, Ray, Frinchaboy                       | <i>Calibrating the Asteroseismic-Age Relation in<br/>Giant Stars using Open Clusters in K2 Campaign<br/>Fields</i>                       |
| UAO-S195 | Williams, Giavalisco, Lee                              | <i>Extreme Feedback: the Drivers of Galactic-scale<br/>Outflows at High Redshift</i>   |