

Resultados del Concurso 2010B para Observaciones en Gemini-Sur

Propuesta: GS-2010B-Q-1

Investigador Principal: Felipe Barrientos, Pontificia Universidad Católica de Chile

Título: Mass Calibration and Gas Physics of a Complete Sample of ACT SZE-Selected Galaxy Clusters

Resumen: We propose to use Gemini/GMOS to obtain spectroscopic redshifts and dynamical mass estimates for the first sample of high-redshift galaxy clusters detected by the Atacama Cosmology Telescope (ACT) via the Sunyaev-Zeldovich effect (SZE). The proposed GMOS observations of 14 massive newly-discovered SZE-clusters will provide a precision calibration of the SZE signal (Y) vs. mass correlation at redshifts out to $z=1$. With this calibration, our existing SZE-selected cluster sample should enable a better measurement of σ_8 and Ω_M . The observations will also allow us to study the evolution, star formation rates and stellar populations in the most massive clusters over 0.3

Tiempo asignado: 21.5

Propuesta: GS-2010B-Q-28

Investigador Principal: Sebastian Lopez

Título: Surveying the Post-Reionization Universe with Quasar Spectroscopy II

Resumen: We propose to obtain GMOS-S spectroscopy of 20 quasars as part of a multi-semester endeavour to study the $z>4.4$ IGM with Gemini (a related 2010B GMOS-N proposal is submitted). Ultimately, our

Tiempo asignado: 3

Propuesta: GS-2010B-Q-19

Investigador Principal: Neil Nagar, Universidad de Concepción

Título: Tracing gas flows in Active Galactic Nuclei down to the innermost few parsecs

Resumen: We propose GMOS IFU emission-line spectroscopy of the extended H α gas in the inner kiloparsec of nearby active galactic nuclei (AGN) hosts, selected for having dusty nuclear spirals, in order to test the hypothesis that these spirals trace the channels through which the nuclear supermassive black hole is being fed. This study is motivated by the recent results obtained by our group for three nearby galaxies with LINER nuclei: NGC1097, NGC6951 and M81. In these galaxies, the H α kinematics within the inner kiloparsec shows streaming motions towards the nucleus with speeds of the order of 50 km/s. This

result suggests that dusty nuclear spirals do trace inflows, but this needs to be confirmed in a larger sample of AGN's, including a broader range of activity types. As the next step towards this goal, we propose to use Gemini/GMOS-IFU to map the gas kinematics in three nearby Seyfert galaxies: NGC1358, NGC1667 and NGC2110, all three having nuclear spirals and being more active than the LINERs so far observed. Together with our 3D imaging of Seyfert and inactive galaxies with Magellan IMACS-IFU, we aim to characterise black hole accretion and growth in a statistically significant sample of galaxies.

Tiempo asignado: 6.6

Propuesta: GS-2010B-Q-3

Investigador Principal: Franz Bauer, Pontificia Universidad Católica de Chile

Título: What powers IR-bright, optically-unidentified, candidate Compton-thick AGNs?

Resumen: Mid-IR emission line diagnostics from recent Spitzer-IRS spectroscopy suggest that ~27% of bolometrically-luminous galaxies at $D < 15$ Mpc host intrinsically luminous AGNs (Goulding & Alexander 2009), despite the fact that many have weak optical and X-ray nuclei. Such AGNs are presumably heavily obscured and may be surrounded by potentially Compton-thick central regions. This result implies that sensitive optical surveys may be missing ~50% of the AGN population in the nearby Universe, possibly skewing our understanding of various AGN-related phenomena. The current Spitzer constraints, however, are limited by contamination due to circumnuclear star formation. Following Gandhi et al. (2009), we request T-ReCS diffraction-limited mid-IR imaging and spectroscopy for five optically-unidentified AGNs which currently lack high spatial resolution mid-IR continuum luminosity constraints. These observations will provide an unambiguous indicator of the intrinsic AGN luminosity, first order measurements of the AGN obscuration, and better constrain the incidence of Compton-thick AGNs in the local Universe.

Tiempo asignado: 14

Propuesta: GS-2010B-Q-53

Investigador Principal: Felipe Barrientos, Pontificia Universidad Católica de Chile

Título: Spectroscopy of Infrared Galaxies in Clusters to $z = 1$

Resumen: We are conducting a multi-wavelength study of a unique sample of galaxy clusters over the redshift range $0.3 < z < 1.1$. A key component of this program is infrared imaging with the Spitzer Space Telescope at 24microns, which is sensitive to dust enshrouded star formation activity. Here we propose to obtain deep spectroscopic observations of a luminosity limited sample of infrared sources within the cluster fields, which are key to studying the evolution of the infrared galaxy population within clusters with redshift, in comparison to the field, and as a function of cluster properties, such as mass and dynamical state. This will elucidate the nature and origin of the infrared galaxies in clusters, in the context of hierarchical formation and galaxy evolution in high-density regions. Our sample is unique in having the mass, redshift, and multi-wavelength coverage to address these important scientific issues.

Tiempo asignado: 11

Propuesta: GS-2010B-Q-31

Investigador Principal: Michel Cure, Universidad de Valparaíso

Título: Revealing the outflowing disks of B[e] supergiants

Resumen: B[e]sg are B-type supergiants, surrounded by non-spherically distributed material where strong line emission is created. The detection of strong infrared excess led to the assumption of these stars being

Tiempo asignado: 7.52

Propuesta: GS-2010B-Q-51

Investigador Principal: J. Jenkins: Universidad de Chile

Título: Imaging companions from the Anglo-Australian Planet Search

Resumen: We propose NICI SDI observations of 30 host stars from the Anglo-Australian Planet Search target list that have displayed the presence of long-period companions, with unresolved periods longer than the current 11 year span of our precision Doppler data. These observations will (1) allow us to determine whether these long-period companions have very long periods (>20yr) and high masses (ie. brown dwarf or M-dwarf masses), or shorter periods (11-20yr) and planetary masses; (2) to do so without the inclination "sin i" degeneracy that afflicts Doppler observations; and (3) allow any T- or Y-dwarfs so detected to be targetted for follow-up as benchmark brown dwarf systems of known age and metallicity.

Tiempo asignado: 7

Propuesta: GS-2010B-Q-77

Investigador Principal: Tom Richtler, Universidad de Concepción,

Título: The dark halos of isolated elliptical galaxies

Resumen: The existence of a tight baryonic Tully-Fisher relation (BTFR) among disk galaxies over 5 orders of magnitude in mass, confirming a prediction of Modified Newtonian Dynamics (MOND), is a disturbing finding for the reigning CDM paradigm of galaxy formation. The claimed universality of MOND, however, still lacks a convincing proof/disproof in the realm of early-type galaxies. Elliptical field galaxies, not being exposed to external fields and without interaction history, which could modify their dark halos, are key objects. The dark halos (or "ghost halos" in the MOND case) of isolated elliptical galaxies cannot be investigated by dynamical tracers like globular clusters or planetary nebulae because of mostly large distances and poor cluster systems. The remaining possibility is to use the galaxy light itself at large radii. Here we propose to investigate the dynamics of the isolated elliptical galaxy NGC 1162 out to 3 effective radii by the technique of ultradeep mask spectroscopy of its diffuse light. Velocity dispersions and higher moments will constrain the circular velocity and probe its consistency with the BTFR of spiral galaxies.

Tiempo asignado: 15

Propuesta: GS-2010B-Q-54

Investigador Principal: Timo Anguita Pontificia Universidad Católica de Chile

Título: Galaxy scale lenses in the RCS2: first catalog of strong lensing systems

Resumen: We propose to confirm the nature of 9 galaxy scale lenses at intermediate/high redshifts ($0.2 < z < 0.6$) and their lensed star forming source galaxies. These lens candidates are southern members observable in period 2010B of a catalog which contains ~60 candidates composed by massive luminous red galaxies surrounded by bright blue arcs in the fields of the Red-Sequence Cluster Survey 2 (RCS2). To promote these candidates to genuine strong gravitational lenses, we request low resolution spectroscopy as a means of measuring the redshifts of both lenses and sources. Once the lens nature of these systems is confirmed, this catalog will significantly increase the number of strong galaxy scale lenses available in their redshift space. Furthermore, we will be able to increase the accuracy of galaxy evolution studies through gravitational lens modeling as well study the properties

Tiempo asignado: 15

Propuesta: GS-2010B-Q-57

Investigador Principal: Matthias Schreiber: Universidad de Valparaíso

Título: The space density of cataclysmic variables

Resumen: Cataclysmic variables are common and structurally simple binaries in which a white dwarf accretes from a low-mass companion. As such, they are an excellent benchmark population to test, calibrate, and further develop binary population synthesis models. These models are used in a wide range of contexts including the formation of binary pulsars and analysing the observed mixture of short/long.

Tiempo asignado: 9

Propuesta: GS-2010B-Q-64

Investigador Principal: Rodolfo Barba, Universidad de La Serena

Título: Unveiling the hidden core kinematics of NGC 253 - II

Resumen: We propose to observe the core region of the nearby spiral galaxy NGC 253 with PHOENIX. We will observe this time the nuclear compact clusters at 2.108 micron Mgl absorption line. Together with the results from previously obtained Phoenix data (sequential longslit mapping of Br_γ emission in the inner 2.5x2.5 arcsec), these observations will: 1) pinpoint the potential well center; 2) resolve the nature of the putative star clusters and nucleus of NGC 253; 3) test the likelihood of a past merger.

Tiempo asignado: 2.5
