Resultados del Concurso 2002B para Observaciones en Gemini-Sur

Propuesta: GS-2002B-Q-4

Investigador Principal: Dr. P. Lira (UCh)

Título: N-band imaging of a complete sample of obscured AGN

Resumen: We propose N-band imaging of a large and complete sample of obscured AGN using T-Recs. This is part of a comprehensive study obtaining infrared data in the 1-10 micron range for targets drawn from an IR-selected sample, ensuring a wide and representative variation in the characteristics of the obscuring material around the central sources. We will determine the spectral energy distribution of the active nucleus in the near and mid-IR to a high accuracy for objects presenting a wide range of obscurations. The results will be compared to theoretical predictions from dusty torus models to constrain the geometry and physical conditions of the central engines. The N-band data will also be useful on its own to determine the reliability of this emission as an unbiased luminosity indicator.

Tiempo asignado: 18 horas

Propuesta: GS-2002B-Q-14

Investigador Principal: Dr. L. F. Barrientos (PUC)

Título:Homogeneity of Cluster Elliptical Galaxies at z~1

Resumen: We propose to use GEMINI+FLAMINGOS to obtain deep J and K imaging in the central regions of 5 z~1 galaxy clusters, taken from the Red-sequence Clu ster Survey (RCS). These data will be used to constrain the homogeneity in the i ntegrated optical-IR colours of the cluster E/S0s, within each cluster and among the different clusters. These data will be combined with already existing optic al imaging and with lower redshift photometry (to construct the optical-NIR colo ur evolution vector) and used to constrain the predictions of popular simple ste llar population (SSP) models, particularly in the NIR. Quantitative morphology w ill allow us to segregate the early-type population and to study their size dist ributions. This program has been awarded time at Gemini twice before, but there are still n o observations taken.

Tiempo asignado: 9 horas

Propuesta: GS-2002B-Q-25

Investigador Principal: Dr. L. F. barrientos (PUC)

Título: The star-formation history of field and cluster galaxies at z = 3.09

Resumen: The discovery of a z=3.09 proto-cluster (Steidel et al. 1998) offe rs a powerful opportunity to probe the relative star-formation history of a sign ificant sample of field and cluster galaxies at redshifts that approach the epoc h of formation. We propose to obtain J and Ks Flamingos I imaging for three fiel ds located within the z=3.09 structure. J-Ks imaging spans the 4000A break in z =3.09 galaxies and offer a sensitive age indicator. These observations will gene rate data for 15 spectroscopically-confirmed cluster members (plus an additional 24 members highlighted by a strong narrow-band excess/deficit centred on Lyman- alpha at the cluster redshift) as well as a sample of ~10-12 foreground and back ground Lyman Break field galaxies. Comparisons of proto-cluster galaxies with da ta on field galaxies both in the fields we will observe and from archival source s will permit a robust constraint (via stellar population models) of the relativ e star formation history of high-redshift field and cluster galaxies - at signif icant look-back times (~10Gyr) this comparison will place strong constraints upo n current models of galaxy formation. This proposal is a resubmission of a high- priority queue-scheduled programme from 2001B. Limited execution of observations combined with detector related problems have necessitated resubmission of this programme.

Tiempo asignado: 12 horas

Propuesta: GS-2002B-Q-1

Investigador Principal: Dr. M. Rubio (UCh)

Título: Study of the Initial Mass Function in Large Magellanic Cloud Star For ming Regions. I. N11

Resumen: In the Magellanic Clouds the molecular clouds have different physi cal properties from those in the Galaxy. The star formation process in this low metallicity environment may also differ. We propose to continue our multiwavelen gth studies of Magellanic Cloud star formation by performing a deep IR census of young stellar objects in three distinct environments in the Large Cloud: N159, a very young and active star forming region; N159-S, a dense 12CO cloud with no optical indication of star formation; and N11, a more evolved HII region/molecul ar cloud complex. In the first two regions we will explore the first-generation IMF, and look for distributed vs. clustered star formation. In this proposal, we will concentrate in N11. We intend to perform deep JHKs Flamingos observations of two OB associations in N11, namely LH9 (4Myr) and LH10(<1Myr). We will com pare the evolved OB association with the younger extincted one which has an env ironment with strong radiative and mechanical energy inputs. In all regions we w ill characterize the population of circumstellar disk objects. The IR imaging da ta will be combined with data from HST/ACS, ISOCAM, SIMBA and ISPI to strengthen the physical analysis. This program is a part of a joint proposal with Argentina, and we request 10 ho urs to perform the HKs observations in Chile time and 4 hours in Agentina time to do the J observations . We plan to complete this investigation in N159 and t he adjacent CO cloud N159- in a future proposal. A program to perform JHK imaging for N11 and N159, was awarded with 11 hours in Band 2 (5 Chile + 6 Argentina) during the period 2001B, but due to Flamingo's instrumental problems was not executed (GS-2001B-Q20, GS-2001B-Q32).

Tiempo asignado: 6 horas