Instituto de Astronomía
Universidad Nacional Autónoma de México
Sede Ensenada, Baja California, México

Seminario de Investigación Extraordinario

MARTES, 19 de Marzo de 2013
13:00 hrs, Auditorio IA-Ensenada

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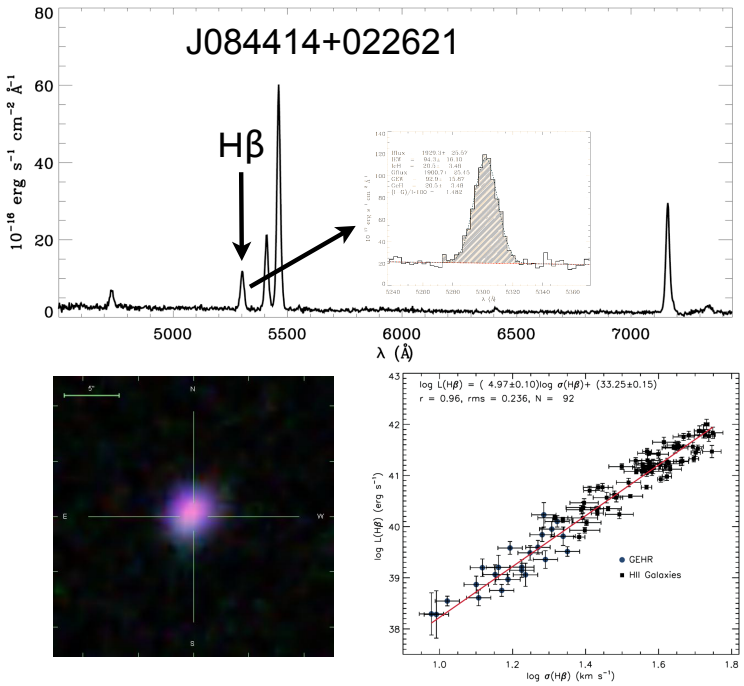
(INAOE)

"PRECISION COSMOLOGY VIA THE L(Hβ)-σ RELATION OF MASSIVE BURST OF STAR FORMATION: THE HUBBLE CONSTANT"



We report the first results of a long-term programme aiming to provide accurate independent estimates of the Hubble constant (H_0) and the Dark Energy Equation of State Parameters, using the L(Hβ)-σ distance estimator for giant extragalactic H II regions (GEHR) and H II galaxies. We have used VLT/Subaru high-dispersion spectroscopic observations and OAN/OAGH low-dispersion spectrophotometry of a local sample of H II galaxies, identified in the Sloan Digital Sky Survey Data Release 7 (SDSS DR7) catalogue in order to redefine and improve the L(Hβ)-σ distance indicator and to determine the Hubble constant. To this end, we utilized as local calibration or "anchor" of this correlation GEHR in nearby galaxies which have accurate distance measurements determined via primary indicators. Using our best sample of 69 nearby H II galaxies and 23 GEHR in nine galaxies, we obtain H_0= 74.3 ± 3.1 (statistical) ± 2.9 (systematic) km s^{-1} Mpc^{-1}, in excellent agreement with, and independently confirming, the most recent Type Ia supernovae based results.