

Poster Summary

Exploiting Large Surveys for Galactic Astronomy

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Project types

- New and recent surveys
- New calibrations and models
- Exploiting existing surveys
- Future survey projects

Proper Motion Sky Survey of 2.7 million stars with the Bordeaux Automated CCD Meridian Circle

C. Ducourant

- Re-observation of the Bordeaux Carte du Ciel zone with the Bordeaux automatic CCD meridian circle
- Digitization of ancient plate archive and the exploitation of large sky surveys
- Three astrometric catalogues of a position and proper motion ($\sigma \sim 1-6$ mas/yr) down to $V \sim 16.4$ of $1/20$ of the celestial sphere.

The Guide Star Catalogue II: Properties of the GSC 2.4 Release

A. Spagna et al.

- The last release, GSC 2.3, contains positions, photographic photometry B,R,I, and classification for approximately 997,028,547 entries extracted from the complete GSC-II database.
- Public access to this catalog is available through a web form at STScI and OAT.
- Describe the properties of GSC 2.3 and discuss its astrometric and photometric accuracy with respect the other large surveys.

Kinematics of Nearby K-M Dwarfs: First Results

JD13-51

A.R. Uppgren et al.

- A kinematically unbiased sample of about 1200 nearby K-M dwarfs.
- Using the Coravel spectrometer of Vilnius University Observatory, radial velocities have been recently measured for 475 K-M dwarfs, mostly of 11-12 mag.
- An attempt is also made to estimate from these data the peculiar motion of the Sun relative to the LSR

The Search For Post-AGB Stars With Dusty Discs

T. Lloyd Evans et al.

- Search for a subset post-AGB stars from RV Tauri-like SED in the 1-60 micron range and near-solar spectral types.
- 4 searches (new obs, 2MASS data, IRAS photometry): Have identified a substantial number of stars, of all effective temperatures, which have dusty discs. They extend the previously-known range of properties of such stars.

Open Cluster Survey: Time-Series Monitoring and Precise Photometry

A. Hojaev et al.

- 7 open clusters monitored for variability with the 1-m telescope at Maidanak Observatory. Monitored since 2001

Preliminary Results from an Open Cluster Polarimetric Survey

A.M. Orsatti et al.

- Aim: To study intracluster dust and interstellar dust distribution
- Observations from Casleo 2.15 m El Leoncito
- At the present stage a total of 17 open clusters are covered, with a range in distance of about 800-2300 pcs. About 500 individual stars are observed

Near Infrared Survey of the Nuclear Region of the Milky Way

U. Joshi, T. Nagata et al.

- Deep imaging in J, H & Ks of the inner ~ 300 pc of the bulge region, particularly in fields of ISOGAL survey at 7 and 15 micron, with the IRSF telescope, SAAO, Sutherland.
- The survey is about 2.5 magnitude deeper than DENIS and 2MASS and is able to detect stars of the red clump near the Galactic centre.

The AST/RO Survey of the Galactic Center Region

C. L. Martin et al.

- Submm survey of excited CO and C[II] around Galactic Center from South Pole
(ApJS 150, 239)

2dF Survey for Omega Centauri Members at and beyond the Tidal Radius

G.S. Da Costa & M.G. Coleman

- Search for possible members beyond tidal radius
- 3822 stars, $\sigma_v < 10$ km/s
- Result: No evidence for large extra-tidal population in Omega Centauri \Rightarrow Stripping happened early

Radio Observations Of The HII Region Complex RCW 95

U. Barres de Almeida et al.

- Studied the complex of compact HII regions RCW 95.
- Radio continuum emission at 43 GHz and a survey of water lines was also conducted at 22 GHz
- The water line survey resulted on the positive identification of maser emission associated with the three IRAS sources, supporting the evidences for these regions to harbour massive young stars. Two other unresolved HII regions, not associated with far-IR sources, were also discovered.

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A Library of Synthetic Spectra for Gaia. Comparison with SDSS

P. Tsalmantza et al.

- Synthetic data required to identify and classify these objects with GAIA.
- The library contains about 4000 zero-redshift spectra, in the wavelength range 250 to 1050 nm. Covers the main Hubble types. The library is produced for various redshifts.
- This synthetic library has been compared with real spectra obtained from SDSS. Two-color diagrams are computed from both the synthetic PEGASE.2 and the real SDSS spectra. The agreement is very good at the full range of galaxy types.

Chemical abundances in the MW: G-type SDSS stars. Autom. Determination of T_{eff} , $\log g$, $[\text{Fe}/\text{H}]$ and $[\alpha/\text{Fe}]$

JD13-46

P. Girard, C. Allende Prieto, & C. Soubiran

- Determined atmospheric parameters for ~ 15000 SDSS spectra convolved at the same resolution.
- This very large sample was used to investigate the spatial distribution of $[\alpha/\text{Fe}]$ in the galactic disk.

The SDSS-I Value Added Catalog of Stellar Parameters and the SEGUE Pipeline

JD13-26

T. C. Beers et al.

- Calibration, and refinement of the SDSS-I Value Added Catalog (VAC) of stellar abundances, temperatures, and surface gravities.
- A spectroscopic pipeline has been developed that obtains estimates of $[Fe/H]$, T_{eff} , and $\log g$
- same pipeline is being used for estimation of stellar parameters for the ongoing SEGUE: Sloan Extension for Galactic Understanding and Evolution project.

Search for and Investigation of New Open Clusters using the Data from Huge Astronomical Catalogues

JD13-43

S.E. Kozlov & E. Glushkova

- Developed a new method of effectively searching star catalogues (like USNO, 2MASS etc.) for stellar clusters of different radii.
- Automatically find candidates for clusters, confirm them, and determine main parameters (age, radius, distance and colour excess).

Searching for White Dwarfs in Surveys

A. Kawka & S. Vennes

- Used the Revised-NLTT (rNLTT) catalog of Salim & Gould (2003) to search for new nearby white dwarfs also used Sloan Digital Sky Survey (SDSS)
- Used the 2dF QSO Redshift Survey (2QZ) white dwarf catalogue as a base to investigate the photometric properties of white dwarfs in the ultraviolet (GALEX) and optical (SDSS).

Preparations for Gaia: What Gaia will see

B. Drimmel et al.

- Using the Guide Star Catalogue 2.3 (GSC2.3), and appropriate colour transformations, the number of stars is estimated, as a function of Gaia's unfiltered G magnitude, for approximately 1 sq. degree areas over the entire sky.
- The resulting map has been used for mission preparation studies , and as a "reality check" of the counts produced by the Besancon Galaxy Model.

The Strömvil Photometric System: Classifying Faint Stars

A.G.D. Philip & R.P. Boyle

- Strömvil photometric system, a combination of the four Strömgren and three Vilnius system filters.
- The major ability of the Strömvil system is that, from photoelectric measures alone one can determine the reddening, temperature, gravity and metallicity of stars.
- observational programs underway: primary standards, open and globular clusters,

Classification of Eclipsing Binaries in Large Surveys

O.Yu. Malkov, E. Oblak

- Automatic classification of eclipsing binaries from OGLE, MACHO,...

Estimating interstellar extinction toward elliptical galaxies and star clusters

E.R. Amores & J.R.D. Lépine

- Performed comparisons of interstellar extinction models by Amores & Lépine (2005). These models are based on the hypothesis that gas and dust are homogeneously mixed, and make use of the dust-to gas ratio.

Using the Genetic Algorithms to study the Galactic Structure

E.B. Amores & A.C. Robin

- Investigated the spiral structure of the Galaxy from comparisons of the 2MASS data with the results of the Besançon Galaxy Model for inner Galaxy.
- Results suggest a Galaxy with four main spiral arms with pitch angle equal to $11.5^\circ \pm 1.0^\circ$.

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The RAVE Survey: Using the local escape velocity to determine the mass of the Milky Way.

M.C. Smith et al.

- Measurement of the local escape velocity $497 < v_{\text{esc}} < 615$ km/s pins down the potential at the solar radius and can be combined with a chosen halo profile to provide the total halo mass.
- Mass determination is model dependent. Good agreement with halo models with values $0.7 - 2.0 \times 10^{12}$ solar masses.

The Sky Surveys with Astronomical Plate Archives

R. Hudec & M. Basta

- Shows examples of combining digitized archival plates with modern surveys in other wavelengths

Short Timescale Variability In The Faint Sky Variability Survey

L Morales-Rueda et al.

- V band variability analysis of the point sources in the Faint Sky Variability Survey on time scales from 24 minutes to tens of days. About 1% of the point sources down to $V = 24$ are variables.
- About 50 % of the variables show variability timescales shorter than 6 hours. The total number of variables is dominated by main sequence sources. The distribution of variables with spectral type is fairly constant along the main sequence

Variable Stars in the MOA Data Base

L. Skuljan & I.A. Bond

- The Microlensing Observations in Astrophysics (MOA) Collaboration has generated a large volume of photometric data during its routine microlensing survey
- Data was collected with 0.6 m telescope at Mt John University Observatory, New Zealand.
- A new 1.8-m wide-field telescope (MOA-II).
- Tens of millions of stars will be monitored simultaneously every clear night.

Investigation of Star Clusters Detected Automatically in 2MASS Point Source Catalogue

JD13-20

E. Glushkova et al.

- Automatic search for star clusters in huge stellar catalogues based on the convolution with density functions and applied this method to 2MASS catalogue
- Developed a method to verify whether detected stellar groups are real star clusters (lying on the same isochrone).
- By fitting the position of the isochrone, they simultaneously find the main physical parameters of a cluster: age, distance, colour excess.

Using the Geneva-Copenhagen Survey to Study The Nature of the Hyades Stream

JD13-23

Famaey et al.

- Q: Does the Hyades stream consist of coeval stars from ongoing evaporation of the Hyades cluster, or of field stars trapped at resonance by spiral perturbation?
- Data: Geneva-Copenhagen survey of F and G dwarfs (Nordström et al. 2004).
- Result: The mass distribution of the stars in the stream does not match the initial mass function expected for an evaporated cluster. The low-mass stars ($< 1 M_{\text{sun}}$) are primarily field stars, which could originate from the inner Galaxy.

Kinematics of Nearby Disk Stars from Hipparcos Database

R. Teixeira & R.E. da Silva

- Selected ~22,000 Hipparcos stars with parallax & proper motions to study the local stellar kinematics
- The distribution of peculiar velocities is matched by a single Gaussian for young stars; late-type stars are better fit by a sum of two Gaussians.

First Brown Dwarfs from the UKIRT Infrared Deep Sky Survey (UKIDSS)

R. Tata et al.

- Present the first brown dwarfs found in the UKIRT Infrared Deep Sky Survey (UKIDSS).
- Brown dwarf candidates were selected based on their YJHK colors. Follow-up photometry of the candidates from CTIO-4m Blanco telescope with ISPI. Follow up spectroscopy from 4.2-m William Herschel telescope with LIRIS, and the 3.5-m Galileo tel. with DOLORES.
- The spectroscopy confirms **3 L Dwarfs** and **1 T Dwarf** among these candidates.

VIMOS@VLT photometric and spectroscopic survey of the Sagittarius dSph Galaxy

JD13-18

Giuffrida et al.

- Photometric and spectroscopic survey of Sgr dSph with VIMOS@VLT. Derived colour – magnitude diagrams (CMD) and radial velocities across the extension of the galaxy.
- The richest photometric and spectroscopic catalog of Sgr dSph stars.
- Discovered a surprising variety in the CMDs at varying distances from the dSph center, with younger, more metal rich populations in the dSph nucleus, preliminary evidence for a metallicity gradient and some hint of dishomogeneity along the major axis.

The White Dwarf Population in IPHAS

JD13-16

L. Morales-Rueda

- The INT/WFC Photometric H-alpha Survey of the Northern Galactic Plane (IPHAS) surveys the entire Northern Galactic Plane in r' , i' and Halpha to $r'=20$.
- Initially designed to detect Halpha emitting sources, IPHAS - useful for detecting sources with strong Balmer line absorption. Hydrogen-rich white dwarfs with temperatures in the range 10000 K to 20000 K (where the Halpha line is strongest) can be detected by IPHAS with a very high level of confidence.

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The European Galactic Plane Survey: EGAPS

P.J. Groot et al.

- EGAPS will survey the complete Galactic plane to 21st mag in *ugri*, H α and He I 5875 (1 billion objects)
- Discoveries will include WR stars, PNe, WDs, CVs...

Vista Variables in the Via Lactea

A.V. Ahumada et al.

- Proposal for a public IR variability survey of the entire Milky Way Bulge and a large portion of the Southern Galactic Plane with VISTA at ESO Paranal Observatory
- The VISTA observations will be combined with data from MACHO, OGLE, EROS, 2MASS, DENIS, VST, SPITZER, HST, CHANDRA, INTEGRAL and ALMA for a complete understanding of the variable sources in the inner Milky Way.

LOBSTER Telescopes as X-ray All Sky Monitors

JD13-52

R. Hudec et al.

- A novel design of powerful X-ray all-sky monitors is described

Japan Astrometry Satellite Mission for Infrared Exploration: JASMINE

JD13-30,
31, 34, 37

N. Gouda, Y. Yamada, T. Tsujimoto, T. Yano et al.

Goal: Astrometric survey of the Bulge @ 0.9 μm (z-band)

- Main science drivers
 - Map the bulge of the Galaxy
 - Investigate stars in star forming regions
- 10 million stars, 200 degree², duration 5 yr
- Parallaxes, pos. to 10 μas , proper motions to 4 $\mu\text{as}/\text{yr}$ for $z < 14$ mag
- Single-field imaging telescope
- Projected launch date: 2015

Posters describe science, design, simulations, spectrograph

Nano-JASMINE: A Technology Demonstrator for JASMINE

M. Suganuma, Y. Kobayashi et al.

JD13-29,
32

- Scanning microsatellite with 2 FOV, similar to Hipparcos (< 10 kg, telescope 5 cm)
- Science products: positions and proper motions, ± 1 mas at $z < 8$
- Projected launch: 2008