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PROBING THE OUTER GALACTIC HALO WITH RR LYRAE FROM THE CATALINA SURVEYS

A. J. Drake[1], M. Catelan[2,3], S. G. Djorgovski[1], G. Torrealba[2], M. J. Graham[1], V. Belokurov[4], S. E. Koposov[4], A. Mahabal[1], J. L. Prieto[5], C. Donalek[1] Show full author list

Everything begins with **astronomer's data**.

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info IDIC

Dictionary of Nomenclature of Celestial Objects

An **acronym** is created if needed.

Details on Acronym: **[DCD2013]**

[DCD2013] (Drake+Catelan+Djorgovski+, 2013) = (CSS)

Write: <<**[DCD2013]** CSS JHHMMSS.s+DDMMSS>>
<<**[DCD2013]** MLS JHHMMSS.s+DDMMSS>>

N: 12227+2040+1207

Object: RRLyr (SIMBAD class: RRLyr = Variable Star of RR Lyr type)

Note: N=12227+2040+1207 RR Lyrae from the Catalina Surveys Data Release 1 (see http://nesssi.cacr.caltech.edu/DataRelease/index1.html and also http://nesssi.cacr.caltech.edu/DataRelease/RRL.html), that used observations from the Catalina Sky Survey 0.7m Schmidt (**CSS**), and Mt. Lemmon Survey 1.5m Cass (**MLS**) telescopes.

Ref: =2013ApJ...763...32D

by DRAKE A.J. , CATELAN M., DJORGOVSKI S.G., TORREALBA G., GRAHAM M.J., BELOKUROV V., KOPOSOV S.E., MAHABAL A., PRIETO J.L., DONALEK C., WILLIAMS R., LARSON S., CHRISTENSEN E., BESHORE E.

Astrophys. J., 763, 32 (2013)

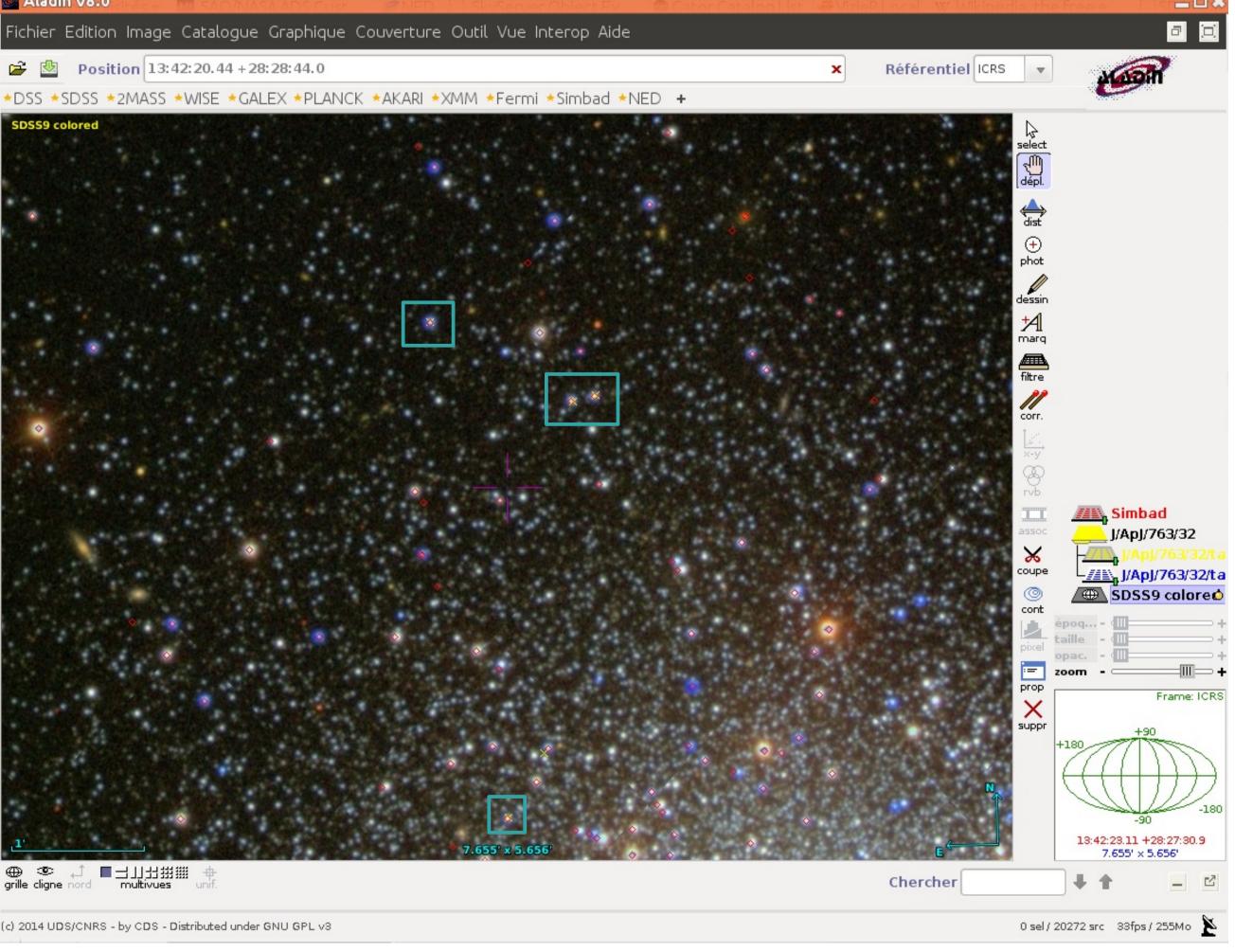*Probing the outer galactic halo with RR Lyrae from the Catalina surveys.*

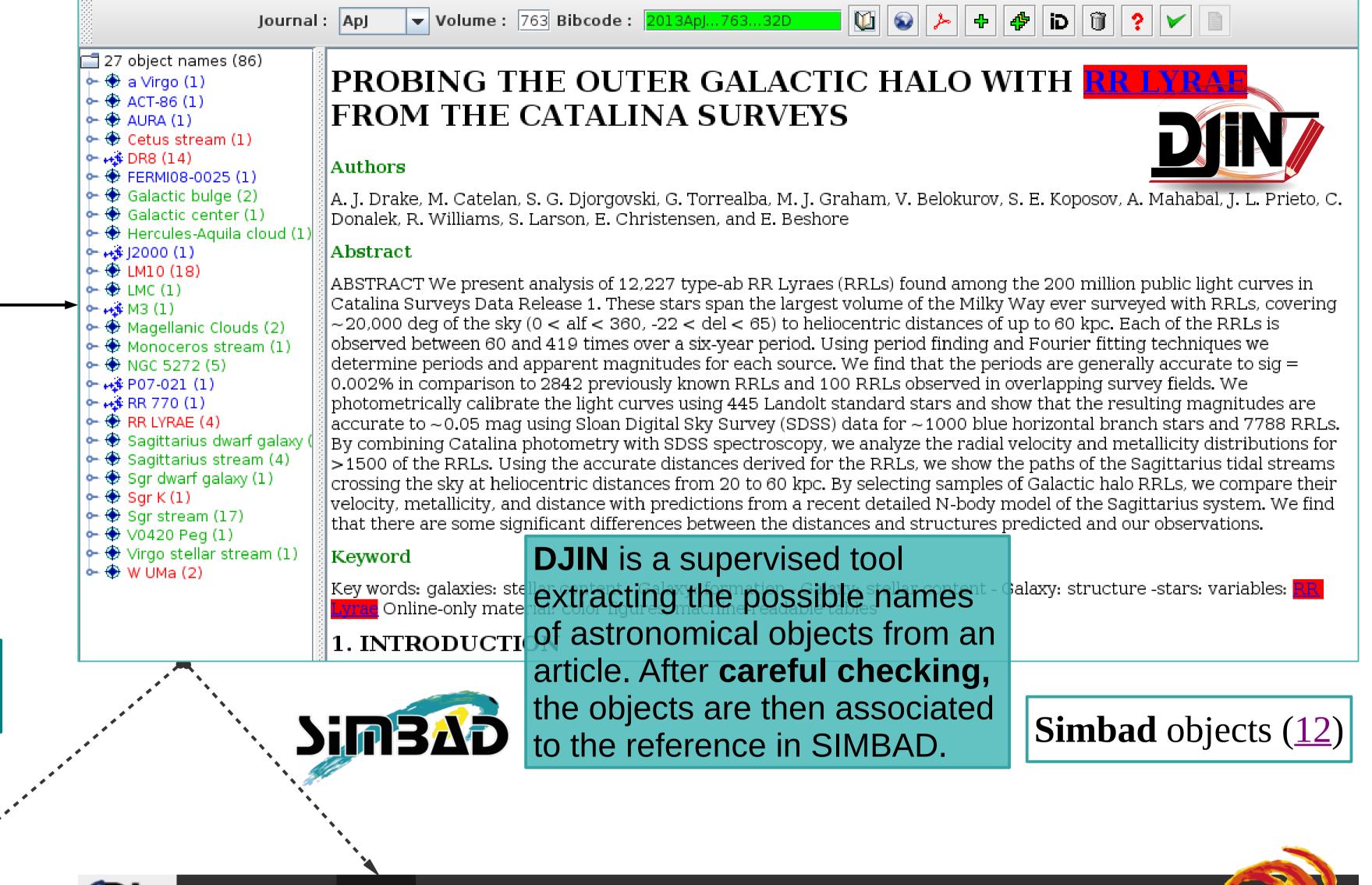○ Tables 1-2: <[DCD2013] CSS JHHMMSS.s+DDMMSS> N=12227.

DJIN — 2013ApJ...763...32D

File Name Identifier Search Configuration Help

Journal : ApJ   Volume : 763   Bibcode : 2013ApJ...763...32D

27 object names (86)

- a Virgo (1)
- ACT-86 (1)
- AURA (1)
- Cetus stream (1)
- DR8 (14)
- FERMI08-0025 (1)
- Galactic bulge (2)
- Galactic center (1)
- Hercules-Aquila cloud (1)
- J2000 (1)
- LM10 (18)
- LMC (1)
- M3 (1)
- Magellanic Clouds (2)
- Monoceros stream (1)
- NGC 5272 (5)
- P07-021 (1)
- RR 770 (1)
- RR LYRAE (4)
- Sagittarius dwarf galaxy (
- Sagittarius stream (4)
- Sgr dwarf galaxy (1)
- Sgr K (1)
- Sgr stream (17)
- V0420 Peg (1)
- Virgo stellar stream (1)
- W UMa (2)

PROBING THE OUTER GALACTIC HALO WITH RR LYRAE FROM THE CATALINA SURVEYS

Authors

A. J. Drake, M. Catelan, S. G. Djorgovski, G. Torrealba, M. J. Graham, V. Belokurov, S. E. Koposov, A. Mahabal, J. L. Prieto, C. Donalek. R. Williams, S. Larson, E. Christensen, and E. Beshore

Abstract

ABSTRACT We present analysis of 12,227 type-ab RR Lyraes (RRLs) found among the 200 million public light curves in Catalina Surveys Data Release 1. These stars span the largest volume of the Milky Way ever surveyed with RRLs. covering ~20,000 deg of the sky (0 < alf < 360, -22 < del < 65) to heliocentric distances of up to 60 kpc. Each of the RRLs is observed between 60 and 419 times over a six-year period. Using period finding and Fourier fitting techniques we determine periods and apparent magnitudes for each source. We find that the periods are generally accurate to sig = 0.002% in comparison to 2842 previously known RRLs and 100 RRLs observed in overlapping survey fields. We photometrically calibrate the light curves using 445 Landolt standard stars and show that the resulting magnitudes are accurate to ~0.05 mag using Sloan Digital Sky Survey (SDSS) data for ~1000 blue horizontal branch stars and 7788 RRLs. By combining Catalina photometry with SDSS spectroscopy, we analyze the radial velocity and metallicity distributions for >1500 of the RRLs. Using the accurate distances derived for the RRLs, we show the paths of the Sagittarius tidal streams crossing the sky at heliocentric distances from 20 to 60 kpc. By selecting samples of Galactic halo RRLs, we compare their velocity, metallicity, and distance with predictions from a recent detailed N-body model of the Sagittarius system. We find that there are some significant differences between the distances and structures predicted and our observations.

Keyword

Key words: galaxies: ste... ...Galaxy: structure -stars: variables: RR LYRAE Online-only mater...

1. INTRODUCTION

SIMBAD

DJIN is a supervised tool extracting the possible names of astronomical objects from an article. After **careful checking**, the objects are then associated to the reference in SIMBAD.

Simbad objects (12)

CDS — Portal Simbad VizieR Aladin X-Match Other Help — **VizieR**

Catalog Selection Page

Galactic halo RRab stars from CSS (Drake+, 2013) [ReadMe+ftp]

J/ApJ/763/32 Similar Catalogs 2013ApJ...763...32D

- J/ApJ/763/32/table1 (c) Parameters of RRab stars *(12379 rows)*
- J/ApJ/763/32/table2 (c) SDSS data for CSS RRab stars *(7760 rows)*

ALL Reset All   Query selected Tables   Join selected Tables

(c) indicates tables which contain celestial coordinates

→ Thanks for acknowledging the VizieR Service
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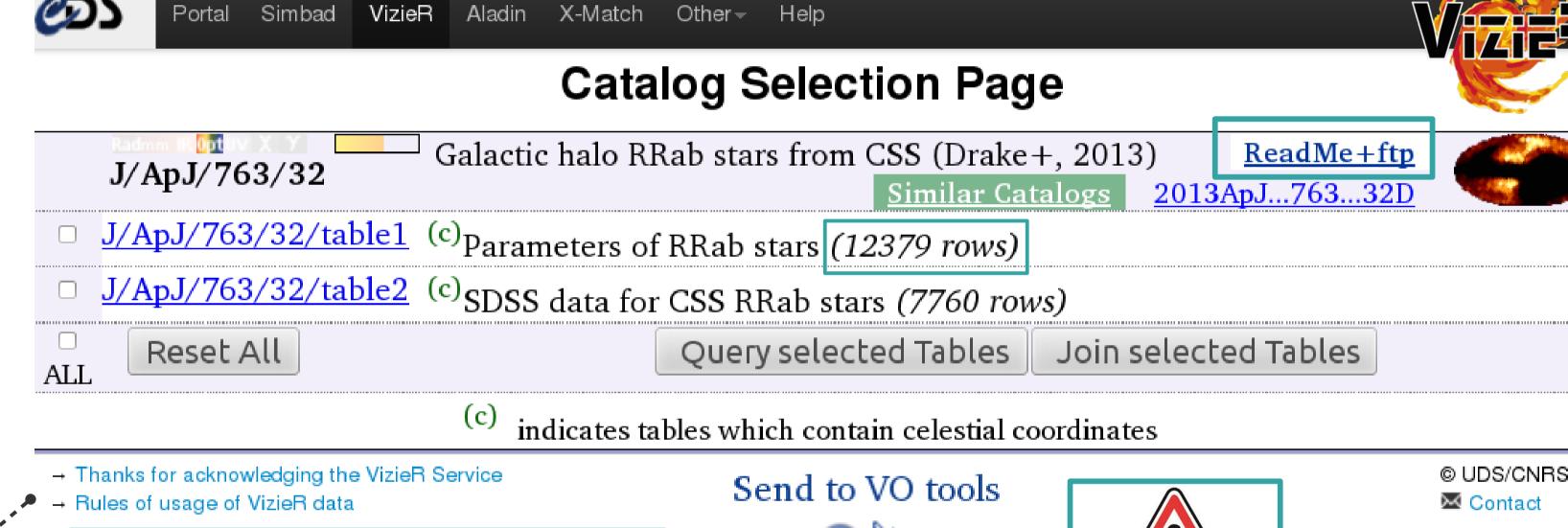
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2013ApJ...763...32D

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2013ApJ...763...32D - Astrophys. J., 763, 32 (2013) - 29.01.13 15.05.15 January(III) 2013 2013-01-20

Probing the outer galactic halo with RR Lyrae from the Catalina surveys.

DRAKE A.J.; CATELAN M.; DJORGOVSKI S.G.; TORREALBA G.; GRAHAM M.J.; BELOKUROV V.; KOPOSOV S.E.; MAHABAL A.; PRIETO J.L.; DONALEK C.; WILLIAMS R.; LARSON S.; CHRISTENSEN E.; BESHORE E.

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Abstract Copyright: American Astronomical Society 2013

Journal keyword(s): galaxies: stellar content - Galaxy: formation - Galaxy: stellar content - Galaxy: structure - stars: variables: RR Lyrae

Nomenclature Note: Tables 1-2: [DCD2013] CSS JHHMMSS.s+DDMMSS N=12227.

VizieR on-line data: <Available at CDS (J/ApJ/763/32): table1.dat table2.dat>

Simbad objects (12303)

Link(s): Full paper ADS services

COSIM

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Around NGC 5272...

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