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doi:10.1088/0004-637X/763/1/32

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

A. J. Drake¹, M. Catelan^{2,3}, S. G. Djorgovski¹, G. Torrealba², M. J. Graham¹, V. Belokurov⁴, S. E. Koposov⁴, A. Mahabal¹, J. L. Prieto⁵, C. Donalek¹ Show full author list Published 2013 January 2 • © 2013. The American Astronomical Society. All rights reserved. • The Astrophysical Journal, Volume 763, Number 1

Everything begins with astronomer's data.

Dictionary of Nomenclature of Celestial Objects

Details on Acronym: [DCD2013]

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

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

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N: 12227+2040+1207

Object: RRLyr (<u>SIMBAD class</u>: 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.

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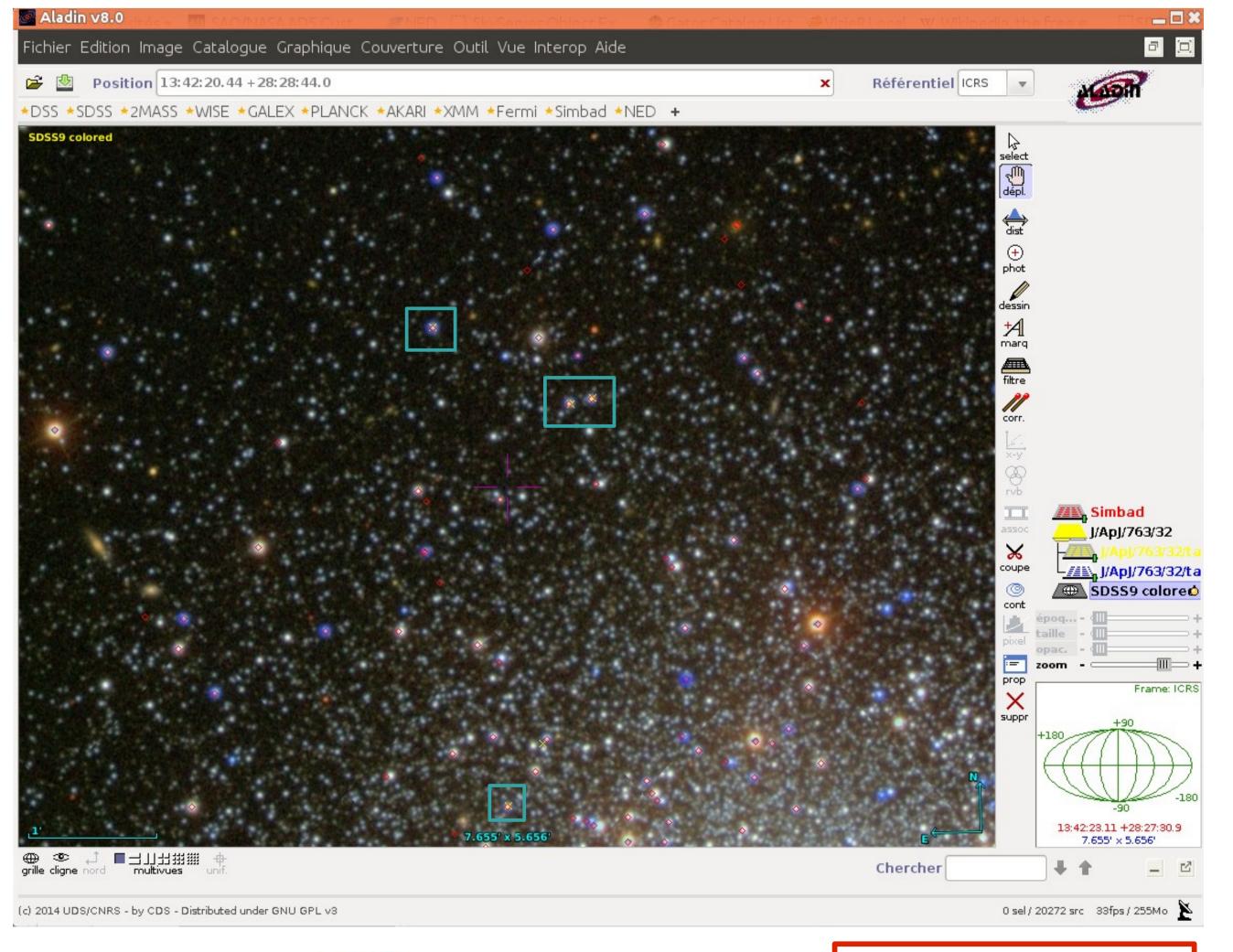
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Meeting with at least 2 astronomers and 1 documentalist



Around NGC 5272...

A. J. Drake, M. Catelan, S. G. Djorgovski, G. Torrealba, M. J. Graham, V. Belokurov, S. E. Koposov, A. Mahabal, J. L. Prieto, C. 🗝 🕀 Galactic center (1) Donalek, R. Williams, S. Larson, E. Christensen, and E. Beshore ← + J2000 (1) Abstract - DM10 (18) ABSTRACT We present analysis of 12,227 type-ab RR Lyraes (RRLs) found among the 200 million public light curves in ← ⊕ LMC (1). Catalina Surveys Data Release 1. These stars span the largest volume of the Milky Way ever surveyed with RRLs, covering \sim 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 ← ♠ Magellanic Clouds (2) observed between 60 and 419 times over a six-year period. Using period finding and Fourier fitting techniques we 👇 🕀 Monoceros stream (1) determine periods and apparent magnitudes for each source. We find that the periods are generally accurate to sig =ф NGC 5272 (5) 0.002% in comparison to 2842 previously known RRLs and 100 RRLs observed in overlapping survey fields. We → ++± P07-021 (1) photometrically calibrate the light curves using 445 Landolt standard stars and show that the resulting magnitudes are ♠ ⊕ RR LYRAE (4). accurate to \sim 0.05 mag using Sloan Digital Sky Survey (SDSS) data for \sim 1000 blue horizontal branch stars and 7788 RRLs. 🔖 🏶 Sagittarius dwarf galax By combining Catalina photometry with SDSS spectroscopy, we analyze the radial velocity and metallicity distributions for 🐆 🕀 Sagittarius stream (4) > 1500 of the RRLs. Using the accurate distances derived for the RRLs, we show the paths of the Sagittarius tidal streams 👇 🏵 Sgr dwarf galaxy (1) crossing the sky at heliocentric distances from 20 to 60 kpc. By selecting samples of Galactic halo RRLs, we compare their - ◆ Sgr K (1) velocity, metallicity, and distance with predictions from a recent detailed N-body model of the Sagittarius system. We find - ◆ Sgr stream (17) that there are some significant differences between the distances and structures predicted and our observations. 🔖 🏵 Virgo stellar stream (1) Keyword **DJIN** is a supervised tool 🗠 🏵 W UMa (2) Key words: galaxies: stellar v: structure -stars: variables: 🎹 extracting the possible names **Wrae** Online-only material: of astronomical objects from an 1. INTRODUCTION article. After careful checking, Simbad objects (<u>12</u>) the objects are then associated to the reference in SIMBAD.

PROBING THE OUTER GALACTIC HALO WITH REPORTS

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

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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.

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The role of documentalists in the CDS workflow

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Dictionary: Marianne Brouty, Fabienne Woelfel

VizieR: Patricia Vannier, Emmanuelle Perret, Sylvain Guéhenneux, Marianne Brouty

COSIM: Catherine Brunet, Fabienne Woelfel, Mihaela Buga, Emmanuelle Perret



1. The « DJIN team »

DJIN - 2013ApJ...763...32D

- → DR8 (14)

- +± 12000 (1)

- ⊕ LM10 (18)

→ ⊕ NGC 5272 (5)

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► ⊕ RR LYRAE (4)

- ⊕ Sar K(1)

- ⊕ W UMa (2)

- ⊕ LMC (1)

- ++\$ M3 (1)

← **⊕** FERMI08-0025 (1)

← ⊕ Galactic bulge (2)

← ♦ Galactic center (1)

👇 🏵 Hercules-Aquila cloud (1)

← ♦ Magellanic Clouds (2)

→ ◆ Monoceros stream (1)

👇 🕀 Sagittarius dwarf galaxy (

- Sagittarius stream (4)

→ ⊕ Sgr dwarf galaxy (1)

- ♦ Sgr stream (17)

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Keyword

1. INTRODUCTION



Simbad objects (12)

1. The « DJIN team »



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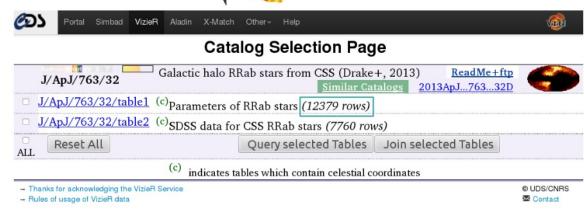
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2. The Dictionary of Nomenclature



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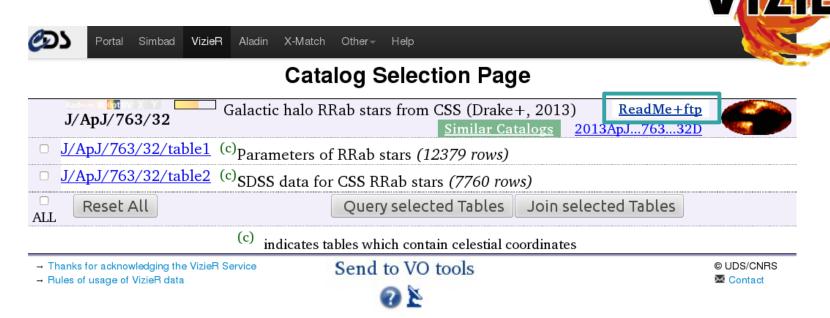
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3. The « VizieR team »

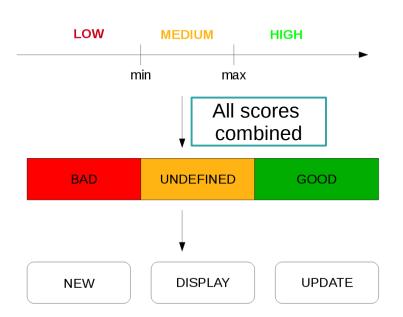


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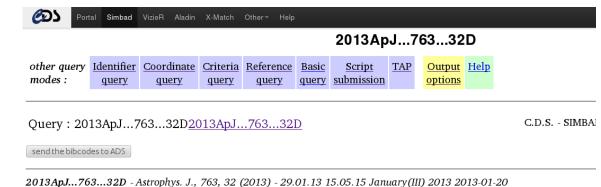




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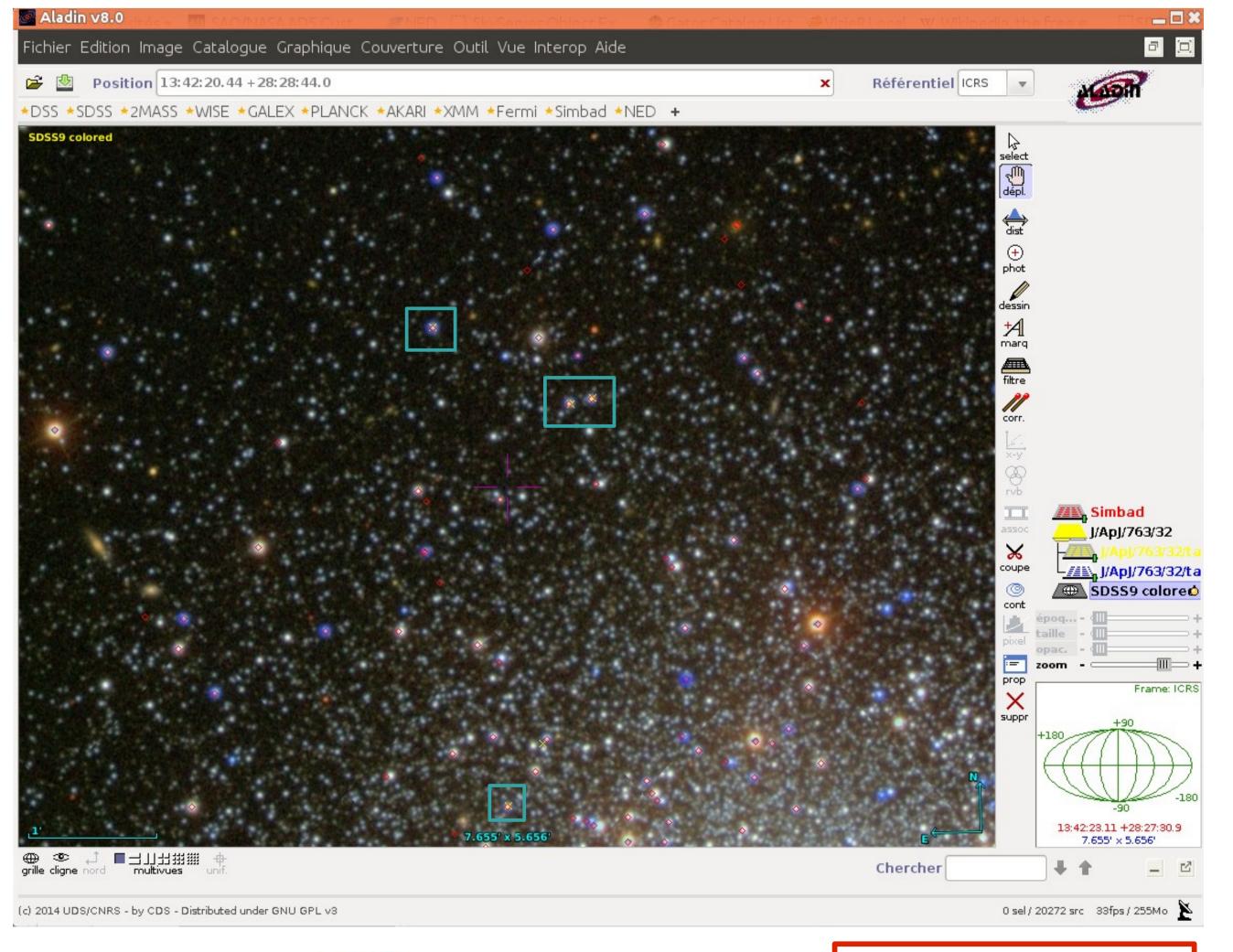
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