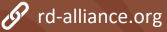


# RDA Global Adoption week

15 - 19 June 2020











# RDA Objective

 Originally planned for Plenary 15, the RDA Adoption week aims to demonstrate the wide variety of RDA adoptable and adopted solutions to data sharing challenges that people in the field encounter in their daily jobs.

### **Purpose of the week:**

- Learn about RDA Outputs
- Converse with speakers from all around the world who have created and implemented them
- Determine how best to integrate those data sharing solutions into your own projects





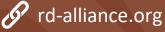
### **Recommendations and outputs catalogue**

- RDA Outputs are classified as RDA Recommendations (official, endorsed results of RDA Groups), Supporting Outputs (useful solutions from our RDA Working and Interest Groups) or other Outputs
- They can be searched according to their status, Data Life Cycle topics or scientific domain



rd-alliance.org/recommendations-and-outputs/catalogue

(RDA











## Friday 19<sup>th</sup> June

### Policy, Legal, Compliance & Capacity

Currently, all scientific communities use their own set of policies, if any. A generic set of policies that can be revised and adapted by users to build up their own data collection does not exist.

- Certification of trustworthiness and robust practices in the archiving and dissemination of data - Heather Leasor (Australian Data Archive)
- Building the Reputation as a trusted Repository following international Standards - Mikaela Lawrence (CSIRO)
- Improving Data Management Procedures based on CoreTrustSeal Certification - Chenzhou Cui (National Astronomical Observatory of China)

Recommendations & Outputs Catalogue short-link: https://bit.ly/376Gx8T



# Join at slido.com #W349



11/06/20









### (RDA) **Tell your adoption story**

- Are you an adopter? RDA is actively seeking new adoption stories to inspire the further uptake of RDA outputs.
- Submit your story here: https://www.rdalliance.org/tell-your-rdaadoption-story

#### **RDA ADOPTION STORIES**

Adopters of RDA outputs share their experiences and lessons learned to inspire further uptake of RDA outputs

oro Read the current adoption stories

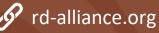


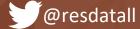
Submit your story through the webform

#### rd-alliance.org/tell-your-rda-adoption-story













# RDA CODATA CfP Data Science Journal

#### • RDA special collection themes:

- Results produced by an IG or WG;
- Description of an Adoption Case outlining how a specific recommendation or output has been implemented;
- Other types of work related to RDA activities.
- RDA Europe 4.0 still has funds available for the publication of articles in DSJ
- Open to all interested applicants regardless of their geographical provenance.
- Deadline 17 July

#### Submit your article for the Data Science Journal Special Collection on RDA

RDA CODATA Data Science Journal special collection solicits high quality papers describing the latest results of RDA WG and IG that have recently published outputs and associated use cases.

#### Publication fees will be covered by the RDA Europe 4.0 project

Publication fees of the first selected 30 articles will be covered by the RDA Europe 4.0 project thanks to specific funding available until 17 July 2020 on a first com first served basis.

Don't miss out, submit your paper now! datascience.codata.org/about/submissions



7



#### 11/06/20





#### WWW.RD-ALLIANCE.ORG/ **@RESDATALL**



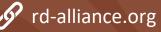
#### **RDA Global**

Email - enquiries@rd-alliance.org Web - www.rd-alliance.org **Twitter - @resdatall** LinkedIn - www.linkedin.com/in/ResearchDataAlliance Slideshare - http://www.slideshare.net/ResearchDataAlliance

**RDA Europe** Email - info@europe.rd-alliance.org **Twitter - @RDA\_Europe** 

**RDA US** Twitter - @RDA\_US













### The Australian Data Archive as a Trusted Repository for Research Data and Data Sharing

Dr. Heather Leasor Archivist and user services, ADA Dr Steve McEachern Director, ADA



### **RDA Global Adoption Repository Audit** and Certification Catalogue RDA Recommendation

- Background of ADA
- Reason to do CTS (DSA/WDS)
- Outcomes
- Next steps

# RDA ADA in Brief

- The Social Science Data Archive (now ADA) was set up in 1981, housed in the Research School of Social Sciences, with a mission to collect and preserve Australian social science data on behalf of the social science research community
- The Archive holds over 5000 datasets from around 1500 studies
- Data holdings are sourced from academic, government and private sectors.

# RDADA Data Holdings



ADA data holdings cover a wide variety of subject areas:

- Ageing
- Business and management
- Census data
- Culture
- Demography
- Drugs, alcohol and tobacco
- Economics
- Education, employment and work
- Environment, Conservation, Land use
- Family studies
- Foreign affairs

Housing

- Gambling
  - Health

- Law, Crime, Courts
- Mass media, communication and language
- Migration, immigration and multiculturalism
- Politics and elections
- Public opinion and social attitudes
- Psychology
- Quality of life
- Science, Technology
- Social welfare
- Sociology
  - Tourism, recreation and leisure
    - Travel and transport





- 2019
  - 25000 data file downloads
  - 2500 new users each year
- User types (2016 figures):
  - Undergraduates: 41% of analysis, 16% of downloads
  - Postgraduates: 33% / 40%
  - Researchers:11% / 40%
  - Others (media, government, NGO, etc.): 15% / 4%
- Institution types: (approx.)
  - Australian universities: 70%
  - International universities: 15%
  - Government departments and agencies: 10%
  - Other: 5%

RDA

14



# CTS (DSA/WDS)

# RDA ore Trust Seal

- Undertook a project with Australian National Data Service (ANDS) now Australian Research Data Commons (ARDC)
- ARDC member of RDA
- Used the opportunity to assess the CTS in the Australian Context for the Social Sciences.

# **RDProject** phase

- Work with ANDS
- Assessing the criterion
- Assessing what documents existed in and out of public domain
- Assessing what could and should be in public domain
- Assessing agreements with outsource partners and how to demonstrate these
- Completing the CTS application and assessment
- Outlining changes to implement to ensure continued certification and fit with FAIR and 5 SAFES





#### **Challenges in the Process**

- Complex interplay between guidelines and relevant documents
- How to provide evidence from documents/items not in the public domain
- What constitutes risk management assessment
- Determining timelines for "in process of implementation"
- 9 of 16 guidelines required edits. In addition most links required website updates due to changes.





- Redevelopment of our database and website infrastructure
  - New website <u>https://ada.edu.au/</u>
  - New data catalogue <u>http://dataverse.ada.edu.au</u>
- Documentation
- Service Platform for repository

# RDA website: https://ada.edu.au



Find

Go to: ADA Dataverse Catalogue Search Dataverse Catalogue ..

Depositing Data Popular Data User Guides Accessing Data News

Find



Search our Dataverse catalogue: Enter search terms...

Welcome to the new homepage for the Australian Data Archive. Here you can access ADA datasets, and find out more about accessing ADA data, depositing data with the Archive, and research data management.

The Archive is in the process of a major upgrade to its archive and catalogue systems. Part of this upgrade is the move of



#### **Dataset pages**



Study information is based on the **DDI-C** (Data Documentation Initiative) standard, and includes:

- Files: data and documentation files
- Metadata: information including the investigators, abstract, sample, data collection methods
- Terms: terms and conditions of use, and access requirements.
- Versions: current and previous versions of the dataset
- Also includes a CITATION and DOI for every dataset

Department of Social Services; Australian Institute of Family Studies, 2019, "Building a New Life in Australia: The Longitudinal Study of Humanitarian Migrants, Release 5 (Waves 1-5)", doi:10.26193/0AF6TZ, ADA Dataverse, V2

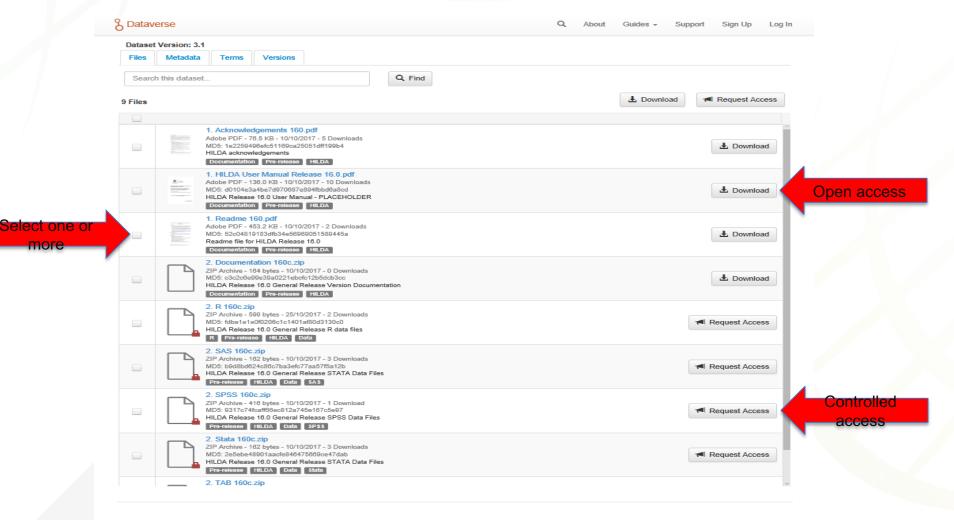


### ADA Dataverse: https://dataverse.ada.edu.au



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Author Name Irving Saulwick and Associates (164)	Footprints in Time: The Longitudinal Study of Indigenous Children, Release 10 (Waves 1-10)							

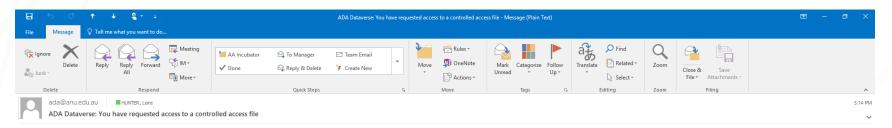
### RDA Request access to data (1)



Developed at the Institute for Quantitative Social Science | Dataverse Project on y | Code available at T Copyright © 2017



### Email notification: confirmation of access request



#### Hello,

Thank you for your recent application for access to controlled access files from the dataset The Household, Income and Labour Dynamics in Australia (HILDA) Survey, General Release, 2017 Pre-release DEVELOPMENT VERSION . Your application is currently being reviewed. (view at <a href="https://dataverse\_dev.ada.edu.au/dataset.xhtml?persistentid=doi:10.5072/82/8932D5">https://dataverse\_dev.ada.edu.au/dataset.xhtml?persistentid=doi:10.5072/82/8932D5</a>).

ADA or the Data Owner may need to follow up further with you to clarify details of your request. Should this be required, we will contact you within three (3) business days.

Thank you, The Australian Data Archive on behalf of the data owner

🗄 5 O	↑ ↓ &	ADA Dataverse: You have been granted access to a controlled access file - Message (Plain Text)						
File Message	$\ensuremath{\underline{Q}}$ Tell me what you want to do							
fige Ignore Delete ₽⊙ Junk ~	Reply Reply Forward All Forward Forw	AA Incubator 🕞 To Manager 🖃 Team Email V Done 🕞 Reply & Delete 🍞 Create New	Move D Or	Note Mark Categorize Follow	Find Translate → Find → Related → Zoon → Select →	Close & Save File - Attachments -		
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ADA Dataverse: You have been granted access to a controlled access file								

#### Hello,

You recently applied for access to controlled access files in dataset: The Household, Income and Labour Dynamics in Australia (HILDA) Survey, General Release, 2017 Pre-release DEVELOPMENT VERSION. We are pleased to advise that your application for access has been approved.

Your obligations as an Authorised Data User are contained in the Terms and Conditions of Use

You can now view and download files from the dataset at this link: https://dataverse-dev.ada.edu.au/dataset.xhtml?persistentId=doi:10.5072/82/B93ZD5

If you have any queries in relation to the data please refer to the The Household, Income and Labour Dynamics in Australia (HILDA) Survey, General Release, 2017 Pre-release DEVELOPMENT VERSION supporting documentation or click on the email icon from anywhere in Dataverse to submit a query.

Thank you, The Australian Data Archive on behalf of the data owner.

(RD)



### Benefit

- Refinement of process, policy and procedure
- New perspective
- Trust from users and contributors
- Ease of access to information for contributors for ethics, grants/funding and participant information
- Integration of data deposit and reuse into the data lifecycle and data management plans





### **Next Steps**

### New functionality:

- Self-deposit of data and ensuring FAIR and TRUST
- Collaborations
- Open data access
- API access (both for deposit and access, e.g. through R)
- Shibboleth authentication
- ORCID integration



### **Further Refinement for Reusability**

#### Business rules

- ADA continuing to refine Business rules
- O ADA continue to refine our outsource partner agreements and arrangements
- Approvals are managed in Dataverse
- Communications between users, ADA and owners regarding requests is managed via email, and logged in the ADA ticketing system
- Finding ways to Link into FAIR principles and 5 Safes Models for streamlined access
- Updating and keeping compliant on Licensing and Terms of use (Terms tab)
- Provenance provided (Metadata tab standards and controlled vocabularies)
- Common standards
- Recertification





DATA DOCUMENTATION INITIATIVE





### Thank you! Questions?

Please feel free to contact the ADA

ada@anu.edu.au

http://ada.edu.au





### **Core Trust Seal Outcomes**

- Identified 4 guidelines set at level 3
  - 7 Data integrity and authenticity
  - 10 Preservation plan
  - 15 Technical infrastructure
  - 16 Security
- Identified 12 guidelines set at level 4
  - Assessor indicated potential to move Guideline 9 Documented storage procedures to a 3

#### Building the Reputation as a trusted Repository following international Standards

Commonwealth Scientific and Industrial Research Organisation (CSIRO) Data Access Portal (DAP) adopts Repository Audit and Certification Catalogue RDA recommendation





### **CSIRO Data Access Portal**

**Trusted Data Repository Project** 

Mikaela Lawrence

INFORMATION MANAGEMENT AND TECHNOLOGY



RDA Global Adoption Week - 19 June 2020

CSIRO is a trusted organisation that undertakes research of fundamental importance to Australia. This research produces data that CSIRO manages over the longterm, enabling reuse as inputs to new research.



### **Certification Project**

Certification of CSIRO's institutional repository, Data Access Portal (DAP) <u>https://data.csiro.au/</u>, as a trustworthy data repository

- DAP infrastructure and software is developed and maintained internally, it has been available since 2012
- Support for the project from Australian National Data Service (ANDS), now the Australian Research Data Commons (ARDC), who are an organisational member of Research Data Alliance



(RDA

# RDA Investigating potential

- To provide trustworthy access to significant data assets
- Host third party data for those organisations with whom we collaborate where appropriate.

# RDA RDA output adopted

Repository Audit and Certification Catal recommendation,

an outcome of the RDA/WDS Certification Repositories Interest Group.

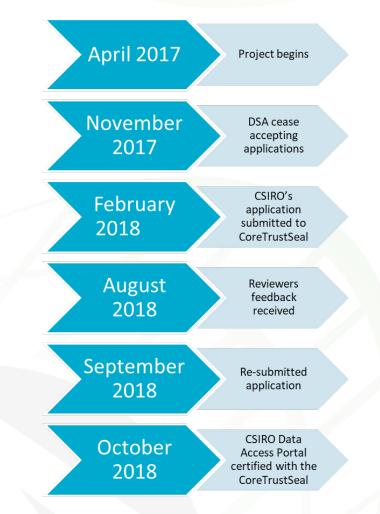


# RDA Adoption to certification process

The project had four distinct phases:

- Understanding requirements
- Gathering documentation, evidence and advice
- Developing publicly available documentation
- Completing the application for certification

# **CSIRO's CoreTrustSeal Application**



### **RDA** Adoption logistics

- Staffing: 2 data librarians or 1.0 full-time equivalent for 8 months
- Senior Legal Counsel: developed policies and procedures for data deposit applications by external organisations
- Information technology staff: consulted on requirements relating to software, infrastructure, disaster management
- Researchers (internal and external): testing procedures for hosting externally owned data.
- Fortnightly meetings: project manager, project sponsor, senior data librarian
- Weekly meetings: ANDS who supported the project

## RDA Hosting externally owned data

- Why was it part of our strategy
- Investigated policies, procedures and system changes to host externally owned data
- Project impact: Processes for requests to host externally owned data in place
- Developed Collection Development Principles https://confluence.csiro.au/display/daphelp/Data+Collection+Development+Principles
- Developed Data Deposit Conditions and Data Deposit Form https://confluence.csiro.au/display/daphelp/External+Data+Applications

## RDA Benefits of adopting the RDA output

- Increased profile of the repository
- Future planning identified areas of strength and weakness
- Policy and procedures for hosting external data
- Professional development
- Networking Australian trusted data repository community of practice, CoreTrustSeal reviewer

## RDA Lessons learned

- Use available resources to develop understanding of requirements
  - Other applications, webinars on the CoreTrustSeal site, professional networks
- Applying for access to the CoreTrustSeal management tool early
- Drawing on expertise within our organisation IT, legal, end users
- Understanding of the risk management and legal framework for externally owned data
- Confirmation that policies and processes are aligned with good practice

## RDA RDA Adoption next steps

Re-certification with CoreTrustSeal

 Full implementation of the disaster recovery plan for Requirement 15 Technical infrastructure (2021-22)

Data Versioning WG

Implement versioning recommendation – remove metadata versioning (2021-22)

FAIR Data Maturity Model WG

Investigating metrics from FAIRsFAIR project (2021-22)

Persistent Identification of Instruments WG

• Investigating using DAP as an instrument register (2021-22)





This project was supported by the Australian National Data Service (ANDS), now the Australian Research Data Commons (ARDC).



ANDS is supported by the Australian Government through the National Collaborative Research Infrastructure Strategy Program

#### National Research Infrastructure for Australia

An Australian Government Initiative

## Thankyou

Mikaela Lawrence Data Librarian mikaela.Lawrence@csiro.au Acknowledgements: Janet Applegate Sue Cook Kathryn Unsworth Cynthia Love Susan McMaster David Lemon

INFORMATION MANAGEMENT AND TECHNOLOGY







#### Improving Data Management Procedures based on CoreTrustSeal Certification

Chenzhou CUI National Astronomical Data Center National Astronomical Observatories, CAS

## RDA Basic Information about CTS



The CoreTrustSeal, launched in 2017, defines requirements and offers core level certification for Trustworthy Data Repositories holding data for long-term preservation. It is a cooperative effort between the Data Seal of Approval (DSA) and the <u>World Data System</u> of the International Science Council (WDS), under the umbrella of the <u>Research Data Alliance</u> (RDA).

#### • 16 Requirements, 150+ Certified Repositories

- **Background Information** (R0)
  - Context
- Organizational Infrastructure (R1-R6)
  - I. Mission/Scope
  - II. Licenses
  - III. Continuity of access
  - IV. Confidentiality/Ethics
  - V. Organizational infrastructure
  - VI. Expert guidance

- Digital Object Management (R7-14)
  - VII. Data integrity and authenticity
  - VIII. Appraisal
  - IX. Documented storage procedures
  - X. Preservation plan
  - XI. Data quality
  - XII. Workflows
  - XIII. Data discovery and identification
  - XIV. Data reuse
- Technology (R15-R16)
  - XV. Technical infrastructure
  - XVI. Security

# RDA History of CAsDC

- The Chinese Astronomical Data Center (CAsDC) is based on World Data Center (WDC) for Astronomy, which is hosted at NAOC and has been providing data services to users since its initiation in 1989.
- In 2012, the CAsDC became a regular member of the new created Word Data System.
- In October 2018, CAsDC passed the CTS certification
  - The ~33rd CST certified Repository
  - The 1st CST certified Repository in Asia

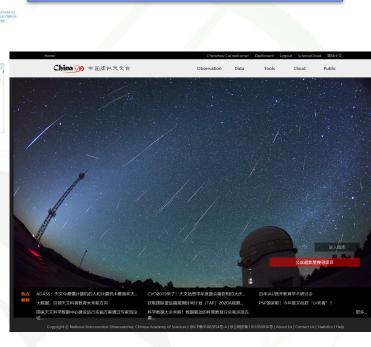




RDA Global Adoption Week - 15 to 19 June 2020

#### RDA **CAsDC Status**





Repository (Data Center)

**Science Platform** 

**Roles:** 

•

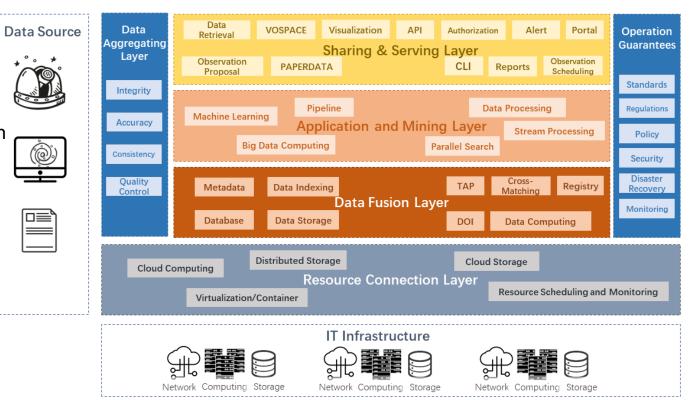
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GE ATA.CN

## RDA National Astronomical Data Center

- In 2019, the CAsDC was endorsed by Chinese government as one of the first 20 national scientific data centers, i.e. National Astronomical Data Center (NADC).
- Required responsibilities
  - $\bigcirc$  Data collection
  - Long-term curation and preservation
  - O Data application and utilization
  - Data sharing and open access
  - International collaboration





#### **Potential Benefits in the National System**

- National Scientific Data Center community
- Long-term operation/funding support
   ~2025
- Interdisciplinary experience sharing

Agriculture, Earth System Science, Space Science, Genomics, Polar Science, Highenergy Physics, Biology, Meteorology, Ocean Science, Seismology



科技部 财政部关于 发布国家科技资源共享服务平台优化 调整名单的通知

教育部、自然资源部、农业农村部、卫生健康委、市场监管总局、 林草局、中科院、地震局、气象局、药当局科技、财务主管部门, 广东省科技厅、财政厅:

为落实《科学数据管理办法》和《国家科技资源共享服务平 台管理办法》的要求,规范管理国家科技资源共享服务平台(简称国家平台)完善科技资源共享服务保系,推动科技资源向社会 开放共享,科技部,财政部对原有国家平台开展了优化调整工作, 通过部门推荐和专家咨询,经研究关形成"国家高能物理科学数 据中心"等20个国家科学数据中心、"国家重要野生植物种质资 源库"等30个国家生物种质与实验材料资源库。

请你们组织依托单位进一步加强对各国家平台的管理, 根据 相关管理分进要求, 制定国家平台五号建设运行实践方案, 进一 岁明晚国家平台功能定位和目标任务, 键型板坝线科技资程炼层 架构, 通进电传域共行建築的国家平台工家与整合, 强化科技 资源开发运用与分析挖掘利用, 提升科技资源使用发率和科技创 新文撑能力, 完善科技资源存储、管理和安全所需基础设施, 健 全网络安全保障体系, 创新运行管理机制, 加强评论考核组织管 超, 开展国际交流与合作, 充分类语法人单位主体责任, 为科学 研究, 找术进步和社会展提供高质量的科技资源共享服务, 构成通知,

附件: 国家科技资源共享服务平台名单



# RDA NADC Unique Characters

- National- and Institute- level data policies as umbrellas
  - Data archiving requirements for research projects
  - Archiving requirements for academic paper uplated data
  - Long-term reservation and open access requirements
- Whole life-cycle management platform
  - One stop (All in one)
  - Serving different types of users
    - Telescope team, observers, sky survey team, scientific users, EPO users, managers, etc.
- Application driven but not tech-architecture driven
  - LAMOST, FAST, time-domain astronomy, ...



### **NADC New Website**

<b>国家科技资源共享服务平台</b> Login Register	简体中文	AII T	Keywords	Search			
NAtional Astronomical Data Center 国家天文科学数据中心 Observation	Data • Featured Service • Cloud Public •						
NEW 新闻动态 更多	● 最新数据资源 更多	精选数	据资源				
▶ 天文学家构建深度学习模型估计LAMO	北京-亚利桑那巡天第三次数据发布	LAMOST光谱巡天	数据集				
▶ 国家天文台科研人员发现一个来自超大质	南银冠U波段巡天星表数据	北京-亚利桑那巡天数据集					
中欧联合发布ESASky中文版	南极之星小望远镜阵2008年数据发布	南银冠U波段巡天数据集					
▶ 公众超新星搜寻项目2020年第二颗发现	LAMOST光谱巡天第七次数据发布第〇版 第三季度	南极之星小望远银	寬阵数据集				
▶ 国家天文台与阿里云二期战略合作正式开启	LAMOST光谱巡天第八次数据发布第〇版 第一季度	怀柔太阳射电宽带动态频谱仪观测数据					
▶ 天文学家利用LAMOST数据对超新星	LAMOST光谱巡天第七次数据发布第一版	丽江2.4米望远镜观测数据					
资源与服务							
天文学名词 论文贮藏库	天文会议信息 媒体资源	标准规范		ΤĘ			
<ul> <li>         ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・</li></ul>	塔一个集変意大利快速電流進。也 か为LAMOST設计并开发了世界上最 高、倍性、备份、以及产品数提用	500米口径球面射电望远 世界最大单口径、最灵敏的的 25日落成,2020年1月11日近	中里远镜技术支持 織(FAST)是黑家十一五重 地里記載。被言为中国天题 起国家脸纹,正式开放运行。 如嘴管理、分析她愿等多种支机	大科技基础设施,是 。FAST于2016年9月 中心为FAST科学观测			
日内核心地基望远镜数据全     5%展2.16米型运输。面工2.4米型运输     加三人本型运输     加三人本型运输     加三人本型运输     加三人本型运输     加雪術に人名文文明设备提供的问题     和当時に対象が可能     和当時に対象があります     式機能管面以提供介性化服务	苏仙湖1米新真空大阳望远镜等— 諸管理、傳輸、旧档、备份、融合的	國家科技基础性工作专项 对国家天文台、紫金山天文的	及日数据汇交与技术 咖啡目天文库片数字化 通过着 会、上海天文台、云海天文台档 注册期和数字化。中心为项目都 和历史资料的开放共享。	藉虛廃片扫描仪完成 藉自1901年至1999年			
♥ 公众科普活动 型多 第 万维望远镜 ● Water Participant	[] 最新论文数据			更多			

#### 第四届万维望远镜宇宙漫游制作大赛

LAMOST-II MRS SPCANet catalog 由中国天文学会、中国科学院国家天文台联合发起第四 THE SEPARATION DISTRIBUTION OF ULTRA-WIDE BINARIES ACROSS GALACTIC POPULATIONS 届万维望远镜宇宙漫游制作大赛正在进行中,快来提交你的 作品吧! LAMOST Medium Resolution Survey Radial Velocity Catalog ▲ 公众超新星搜寻项目2020年第二颗发现 Solar Image Restoration with the Cycle-GAN Based on Multi-Fractal Properties of Texture Features ▲ 360度x180度全景图你了解多少? ● 平台统计数据 ▲ 国家天文科学数据中心日食计算器网站上线 执门下载 ▲ #我与漫游大赛的故事#火热征集中,精美文创... 南极AST3望远镜第一次数据 - 图像 南极AST3望远镜第一次数据 - 光变曲线 国家天文科学数据中山 LAMOST光谱巡天第六次数据发布第一版





National Astronomical Data Center (NADC) is a data

intensive cyberinfrastructure and science platform for astronomy research, education and data-driven applications. The NADC is part of the National Science

and Technology Infrastructure (NSTI), and is authorized

supervised by Chinese Academy of Sciences (CAS) and hosted at National Astronomical Observatories of

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by Ministry of Science and Technology (MOST),

China (NAOC). (i) 相关链接

上级主管部门: 中国科学院

International Virtual **Observatory Alliance** 

i) Organizations

LAMOST光谱巡天第七次数据发布第一版

World Data System



177

ICSU WORLD DATA SYSTEM



**Chinese Astronomical Society** 

Information Working Committee, CAS



平台注册用户数

22790

数据下载次数 (万次)

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SDSS

NEP

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数据查询次数 (万次)

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数据下载总量 (TB)

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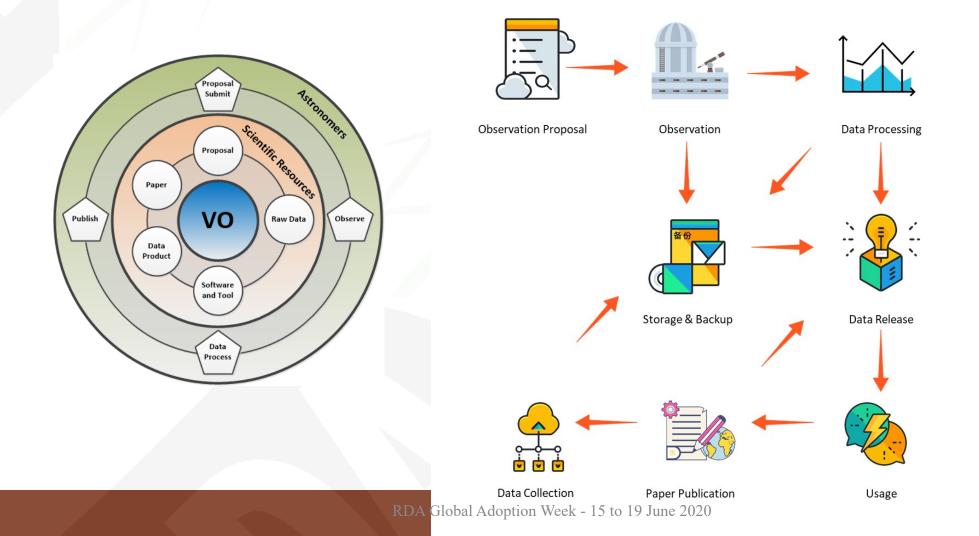




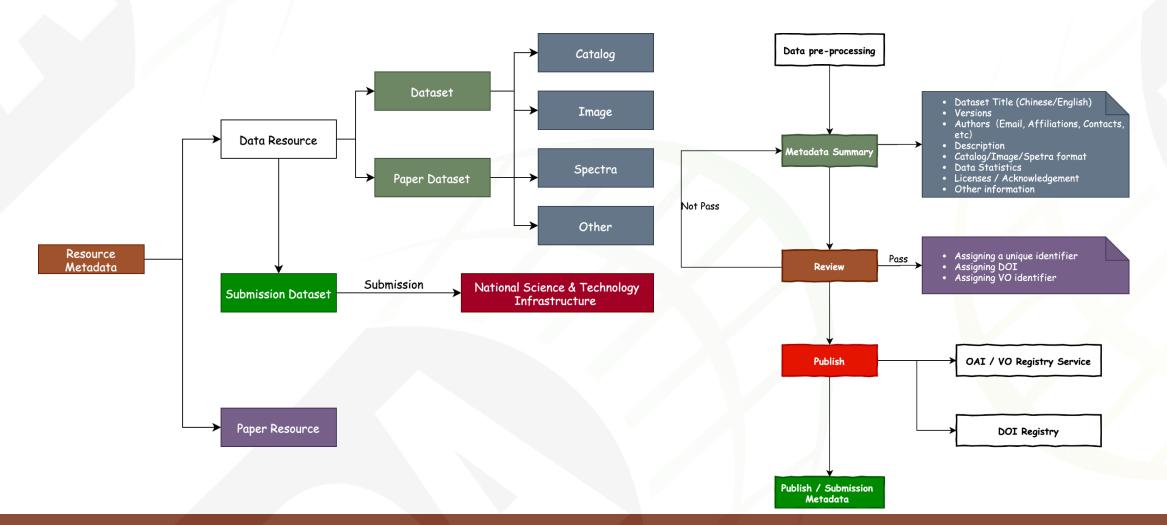
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Zhao-Zhou Li / Yong-Zhong Qian / Jiaxin Han / Ting S. Li / Wenting Wang /Yi-Peng Jing Supplementary data tables for the paper:	Publication date:         2020-03-30 15:27:00           Update date:         2020-03-30 15:27:00           DOI:         10.12149/101018           VO Identifier:         iver://China-VO/paperdata/101018
Constraining the Milky Way Mass Profile with Phase-Space Distribution of Satellite Galaxies	
Zhao-Zhou Li (lizzastro@gmail.com), Yong-Zhong Qian, Jiaxin Han, Ting. S. Li, Wenting Wang, Y. P. Jing arxiv:1912.02086	Versions
https://ui.adsabs.harvard.edu/abs/2019arXiv191202086L	
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#### **International Virtual Observatory Alliance**

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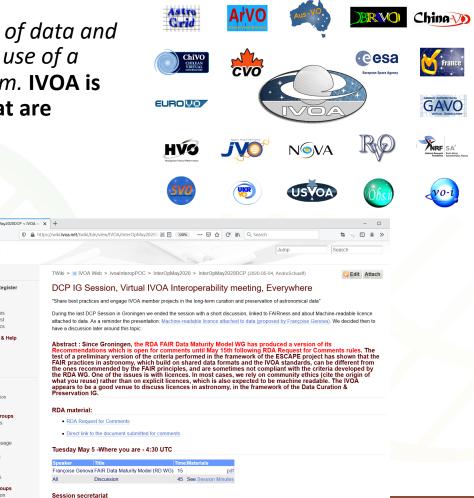
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The vision of Virtual Observatory is made possible by standardization of data and metadata, by standardization of data exchange methods, and by the use of a registry, which lists available services and what can be done with them. **IVOA is an organisation that debates and agrees the technical standards that are needed to make the VO possible.** 

- Created in 2002, 21 member VO projects
- 6 Working Groups, 8 Interest Groups

IVOA has been informed about the RDA activities since the beginning of the RDA. in particular through IVOA Data Curation and Preservation Interest Group, the CTS certification topic has been discussed in the IVOA.

At IVOA May 2020 Interop VM, the Recommendation of the RDA Data Maturity Model WG and its consequences for astronomy were discussed.







### **Thank You**

