

数据产品介绍 及 用户相关协助

孔啸

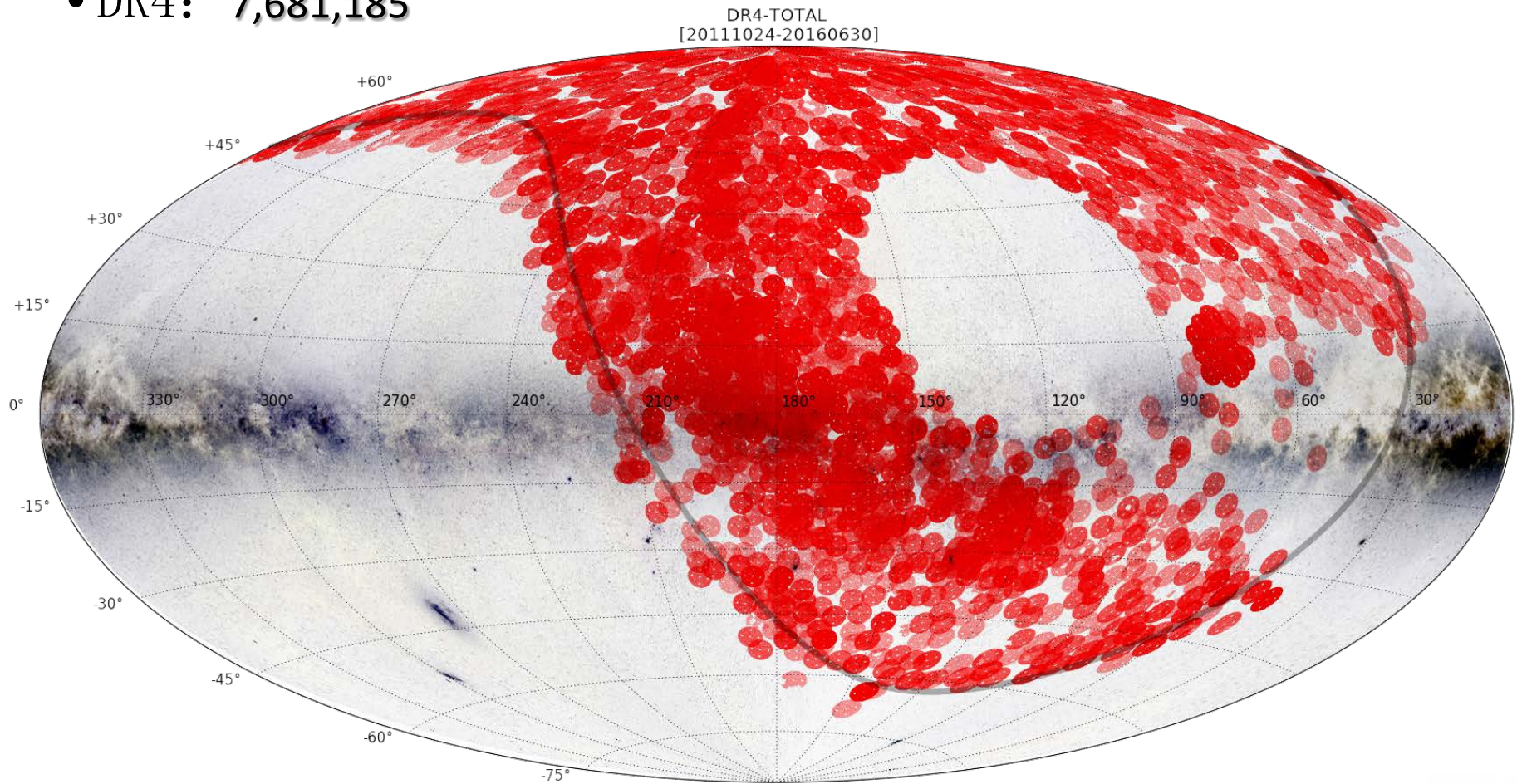
LAMOST数据处理部

2017.2.18

提纲

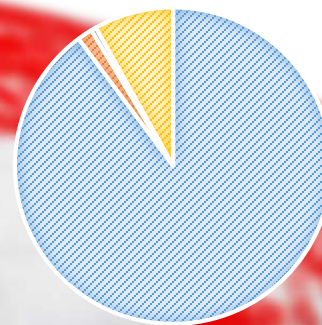
- 数据的生产销售
- 数据产品简介
- 售后服务

• DR4: 7,681,185



DR4

■ STAR ■ GALAXY ■ QSO ■ Unknown

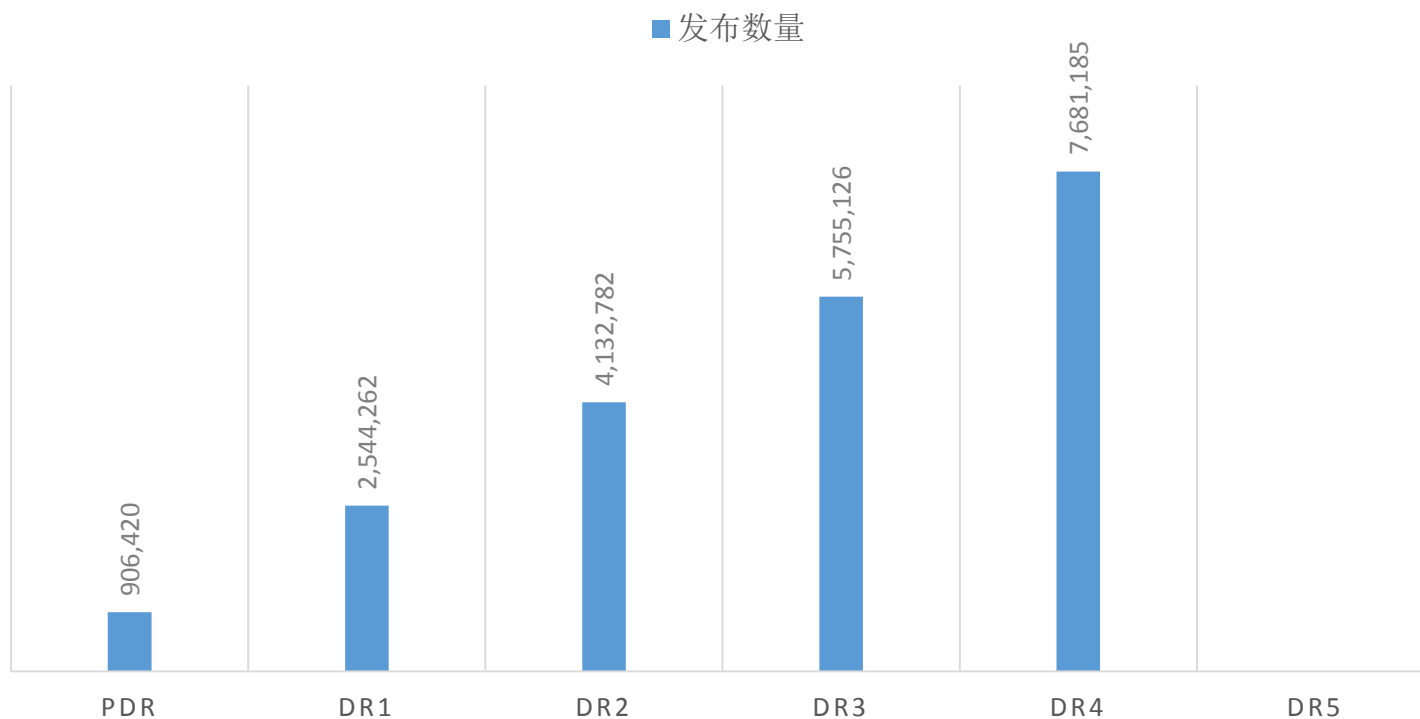


- 国内发布DR4数据产品

- FITS文件
- PNG光谱图片
- Catalog
- 天光数据

	发布数据
STAR	6,898,298
GALAXY	118,743
QSO	41,352
Unknown	622,792
合计	7,681,185

LAMOST数据发布情况



数据产品-光谱数据文件（FITS）

- 命名规则
 - spec-'lmjd'-'planid'_sp'spid'-'fiberid'.fits
 - 例spec-55890-B9002_sp01-048.fits
- 内容
 - <http://dr4.lamost.org/doc/data-production-description>
 - FITS Head
 - FILE INFORMATION
 - TELESCOPE PARAMETERS
 - OBSERVATION PARAMETERS
 - SPECTROGRAPH PARAMETERS
 - WEATHER CONDITION
 - DATA REDUCTION PARAMETERS
 - SPECTRA ANALYSIS RESULTS
 - FITS Data
 - Flux
 - Inverse
 - Wavelength
 - Andmask
 - Ormask

FITS Head

```

fv: Header of spec-55862-B6210_sp03-003.fits[0] in D:/
File Edit Tools Help
Search for: Find Case sensitive? No
SIMPLE = T / Primary Header created by MWRFITS v1.11b
BITPIX = -32 /
NAXIS = 2 / Number of array dimensions
NAXIS1 = 3909 /
NAXIS2 = 5 /
EXTEND = T /

COMMENT -----FILE INFORMATION
FILENAME= 'spec-55862-B6210_sp03-003.fits' /
OBSID = 803003 / Unique number ID of this spectrum
AUTHOR = 'LAMOST Pipeline' / Who compiled the information
DATA_V = 'LAMOST DR4' / Data release version
EXTEN0 = 'Flux, Inverse, Wavelength, Andmask, Ormask' /
N_EXTEN = 1 / The extension number
EXTNAME = 'Flux' / The extension name
ORIGIN = 'NAOC-LAMOST' / Organization responsible for creating this file
DATE = '2016-12-30T09:42:55' / Time when this HDU is created (UTC)
COMMENT -----TELESCOPE PARAMETERS
TELESCOP= 'LAMOST' / GuoShouJing Telescope
LONGITUDE= 117.58 / [deg] Longitude of site
LATITUDE= 40.39 / [deg] Latitude of site
FOCUS = 19964 / [mm] Telescope focus
CAMPRO = 'NEWCAM' / Camera program name
CAMVER = 'v2.0' / Camera program version
COMMENT -----OBSERVATION PARAMETERS
DATE-OBS= '2011-10-27T18:15:00' / The observation median UTC
DATE-BEG= '2011-10-26T02:05:53.0' / The observation start local time
DATE-END= '2011-10-26T02:26:05.0' / The observation end local time
LMJD = 55862 / Local Modified Julian Day
MJD = 55861 / Modified Julian Day
LMJMLIST= '80441401' / Local Modified Julian Minute list
PLANID = 'B6210' / Plan ID in use
RA = 59.472045 / [deg] Right ascension of object
DEC = 28.004688 / [deg] Declination of object
RA_OBS = 59.472045 / [deg] Right ascension during observing
DEC_OBS = 28.004688 / [deg] Declination during observing
OFFSET = F / Whether there's a offset during observing
OFFSET_V= 0.00 / Offset value in arcsecond
DESIG = 'LAMOST J035753.29+280016.8' / Designation of LAMOST target
FIBERID = 3 / Fiber ID of Object
CELL_ID = 'E3323' / Fiber Unit ID on the focal plane
X_VALUE = '276.2652397320' / [mm] X coordinate of object on the focal plane
Y_VALUE = '164.2340003080' / [mm] Y coordinate of object on the focal plane
OBJNAME = '280441217264745' / Name of object
OBJTYPE = 'Star' / Object type from input catalog
ISOURCE = 'PILOT' / Name of input catalog

```

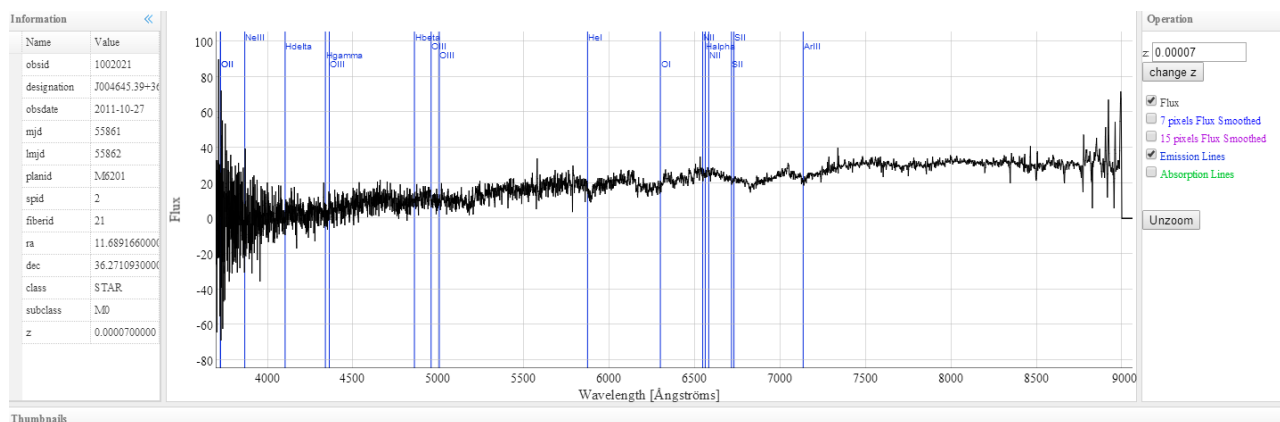
FITS Data

Row Number	Data	Type
5	Ormask	float
4	Andmask	float
3	WaveLength	float
2	Inverse Variance	float
1	Flux	float

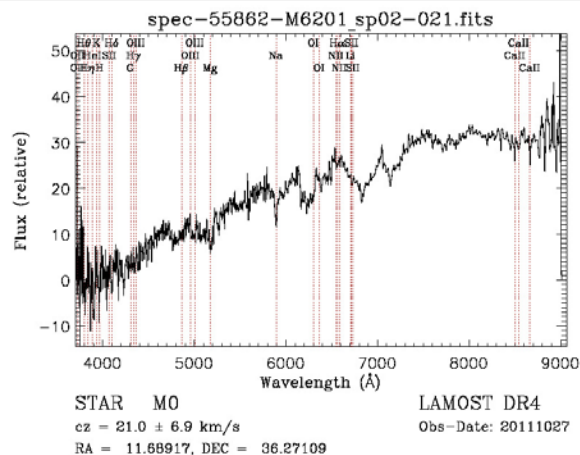
Bit	Keyword	Comments
1	BADCCD	bad pixel on CCD
2	BADPROFILE	bad profile in extraction
3	NOSKY	no sky information at this wavelength
4	BRIGHTSKY	sky level too high
5	BADCENTER	fiber trace out of the CCD
6	NODATA	no good data

数据产品-光谱图片

- 在线浏览



- PNG文件



数据产品-天光数据 (FITS)

```
SIMPLE = T /
BITPIX = -64 /
NAXIS = 2 /
NAXIS1 = 3901 /
NAXIS2 = 250 /
EXTEND = T /Extensions may be present

COMMENT -----FILE INFORMATION
FILENAME= 'sky-55859-F5902_sp09.fits' /
AUTHOR = 'LAMOST Pipeline' / Who compiled the information
DATA_V = 'LAMOST DR4' / Data release version
EXTENO = 'Sky' /
N_EXTEN = 1 / The extension number
EXTNAME = 'Sky' / The extension name
ORIGIN = 'NAOC-LAMOST' / Organization responsible for creating this file
DATE = '2016-12-26T02:07:17' / Time when this HDU is created (UTC)
TELESCOP= 'LAMOST' / GuoShouJing Telescope
LONGITUD= 117.58 / [deg] Longitude of site
LATITUD= 40.39 / [deg] Latitude of site
FOCUS = 19964 / [mm] Telescope focus
CAMPRO = 'NEWCAM' / Camera program name
CAMVER = 'v2.0' / Camera program version
DATE-OBS= '2011-10-24T12:30:00' / The observation median UTC
DATE-BEG= '2011-10-24T19:33:53.0' / The observation start local time
DATE-END= '2011-10-24T21:27:28.0' / The observation end local time
LMJD = 55859 / Local Modified Julian Day
MJD = 55858 / Modified Julian Day
LMJMLIST= '80436692-80436737-80436775' / Local Modified Julian Minute list
PLANID = 'F5902' / Plan ID in use
SPID = 9 / Spectrograph ID
SLIT_MOD= 'x2/3' / Slit mode, x1, x2/3 or x1/2
LAMPLIST= 'lamphgdcne.dat' / Arc lamp emission line list
SKYLIST = 'skylines.dat' / Sky emission line list
NEXP = 3 / Number of valid exposures
EXPTIME = 5400.00 / [s] Minimum of exposure time for all cameras
SCAMEAN = 2.50 / [ADU] Mean level of scatter light
TEMPCCDB= -112.70 / [deg] The temperature of blue CCD
TEMPCCDR= -121.70 / [deg] The temperature of red CCD
SEEING = 4.50 / [arcsec] Seeing during exposure
MOONPHA = 28.30 / [day] Moon phase for a 29.53 days period
TEMP AIR= 2.90 / [deg] Temperature outside dome
```

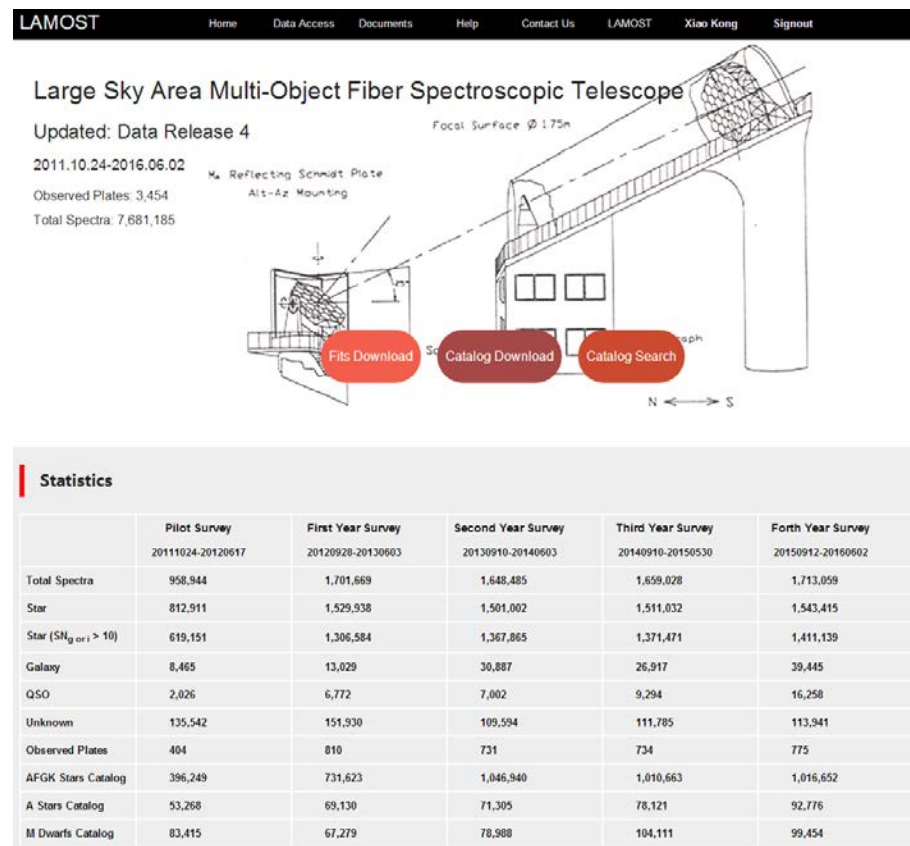
- 数据格式:
 - [sky-lmjd-planid_spspid.fits.gz](#)
- 数据单位:
 - [spid](#)
- 数据：拼接好的天光数据
- FITS头：只保留与光谱仪信息有关的字段
- DR4：52,316个文件

数据产品-Catalog (CSV/FITS)

- General Catalog
 - obsID,designation,obsDate,mjd,lmjd,planID,spID,fiberID,ra,dec,ra_obs,dec_obs,offset,offset_v,snru,snrg,snrr,snri,snrz,objType,class,subclass,magType,mag1,mag2,mag3,mag4,mag5,mag6,mag7,tsource,fiberType,tfrom,tcomment,z,zerr
- A,F,G and K type stars catalog
 - teff,tefferr,log,logger,feh,feherr
- A type stars catalog
 - KP6,KP12,KP18,Halpha12,Halpha24,Halpha48,Halpha70,Hbeta12,Hbeta24,Hbeta48,Hbeta60,Hgamma12,Hgamma24,Hgamma48,Hgamma54,Hdelta12,Hdelta24,Hdelta48,Hdelta64,Paschen13,Paschen142,Paschen242,HalphaD0.2,HbetaD0.2,HgammaD0.2,HdeltaD0.2
- M type stars catalog
 - ewHa,ewHaErr,TiO1,TiO1Err,TiO2,TiO2Err,TiO3,TiO3Err,TiO4,TiO4Err,TiO5,TiO5Err,CaH1,CaH1Err,CaH2,CaH2Err,CaH3,CaH3Err,CaOH,CaOHErr,Na,zeta,zetaerr,type
- Observed plate information catalog
 - pID,obsDate,planID,cra,cdec,cmag,seeing,expTime,MJM

数据产品的获取

- 发布网站
 - <http://dr4.lamost.org/>
- 数据说明
 - <http://dr4.lamost.org/doc/data-production-description>
- 帮助
 - <http://dr4.lamost.org/doc/query-introduction>



973项目2016年度学术讨论会 – 售后服务

数据产品的获取

- Search
 - SQL
 - File download
 - Browse observing
 - Catalog download
-
- 申请账号
 - 陈建军(jjchen@nao.cas.cn)
 - 用户支持
 - 李荫碧(ybli@nao.cas.cn)
 - 数据维护
 - 孔啸(kongx@nao.cas.cn)

Position Constraints

ID Constraints

FITS Name Constraints

Observation Information

Imaging Constrains

Redshift

Classification

Signal to Noise Ratio

Input Catalog Information

A F G K type Star Parameters

A type Star Parameters

M type Star Parameters

Parameters to return

FAQ

TOP

Position Constr

- Search
- SQL
- File download
- Browse observing
- Catalog download

ra	dec	(max 10 square degrees)
ra	dec	
ra	dec	radius [] arcsec (max 30')
list of ra,dec[,radius] (max 100 obj)		or Upload File Sample
<pre>#ra,dec,sep 341.064566,19.566591,2.0 341.412371,19.797618,2.0</pre>		选择文件 没有选择文件
None		No position constraint

Search

Reset

ID Constraints

obsid	list of obsid	or Upload File Sample
	<pre>#353301008</pre>	选择文件 没有选择文件

Search

Reset

FITS Name Constraints

FITS Name	list of FITS name	or Upload File Sample
	<pre>#spec-57309-M31022N4M1_sp05-013</pre>	选择文件 没有选择文件

Search

Reset

Observation Information

(Shift-mouse to select multiple contiguous entries, Ctrl-mouse to select non-contiguous entries)

Obsdate (mjd) All 2011-10-24 (55858) 2011-10-25 (55859) 2011-10-27 (55861) 2011-10-28 (55862) 2011-11-08 (55873)	Plan ID All
Spectrograph ID (1-16) All 1 2	Fiber ID (1-250) All 1 2

Thank You!

2017.2.18