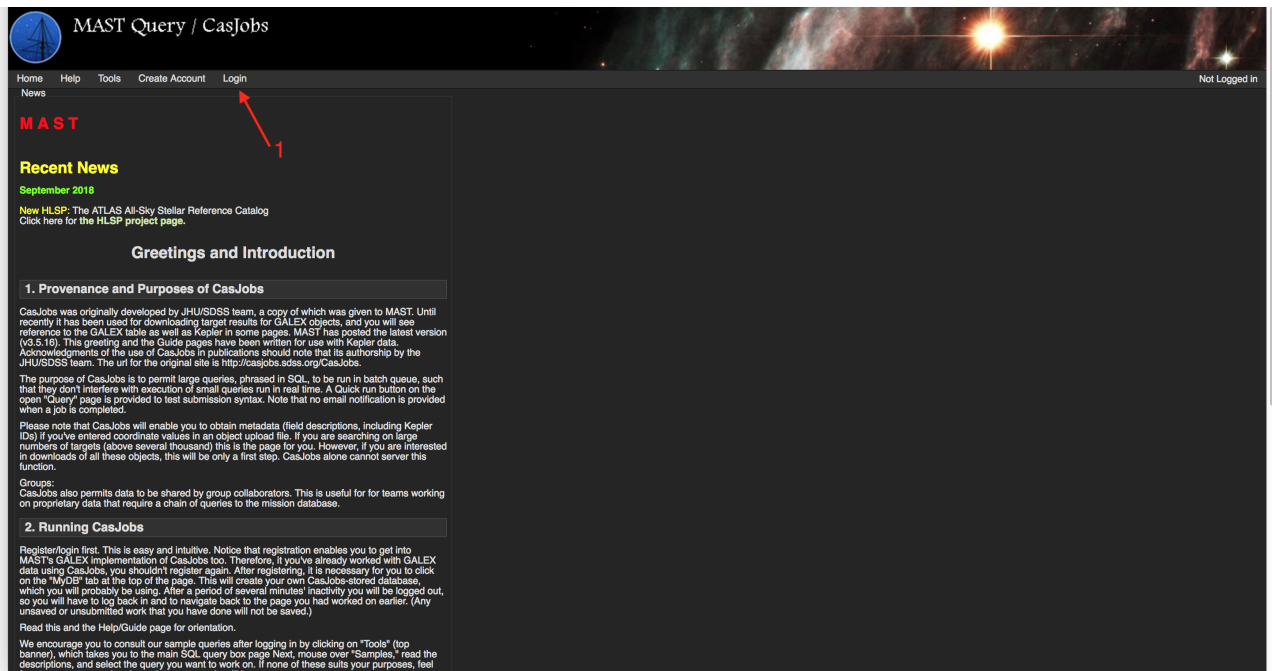


6.0.5 - Find southern hemisphere K dwarfs.

This tutorial will show you how to use [MAST CasJobs](#) to conduct a large query that will select all dwarf stars with temperatures comparable to K dwarfs in the southern hemisphere from the TIC. We'll also show off some of the main areas of CasJobs and how to download your tables once you run a query. Note that in addition to the TIC and CTL, tables from other missions like Kepler, K2, GALEX, and PanSTARRS, as well as several catalogs from [High Level Science Products](#), are all available.

Step 1 - Sign Into CasJobs: The first thing you'll need to do is sign into CasJobs. The Login button is located towards the top of the page (**Item #1**).



Step 2 - Enter Account Info: On the login page, enter your user name and password (**Item #1**). Note that the MAST CasJobs account *is not the same as* your general STScI (MyST) account. If you don't have a MAST CasJobs account, you can register for one using the link towards the bottom of the page (**Item #2**).

MAST Query / CasJobs

Home Help Tools Create Account Login

Not Logged in

User ID

Password

Login

If you do not have a login please create an account.

Contact MAST

CASJobs is made possible by the Sloan Digital Sky Survey Collaboration

SHome: v3.9.18.5, Revision: 1.11.5, Last modified: Tuesday, April 24, 2007 at 11:52:24 PM

Step 3 - Select "TESS_v?" Context: After you sign in, you'll be on the Query page. The first step whenever you want to run a SQL query on a TESS table is to make sure the Context drop-down menu is set to the current version of the TESS catalog (**Item #1**). If you want to query other tables from other missions, or from output tables you create, you can change the Context using this menu before you execute your query.

MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

scfleming

Context

Table (optional)

Task Name

TESS_v?

My table

My Query

Samples

Recent

Clear

Query 1, Col 1

Syntax

Plan

Quick

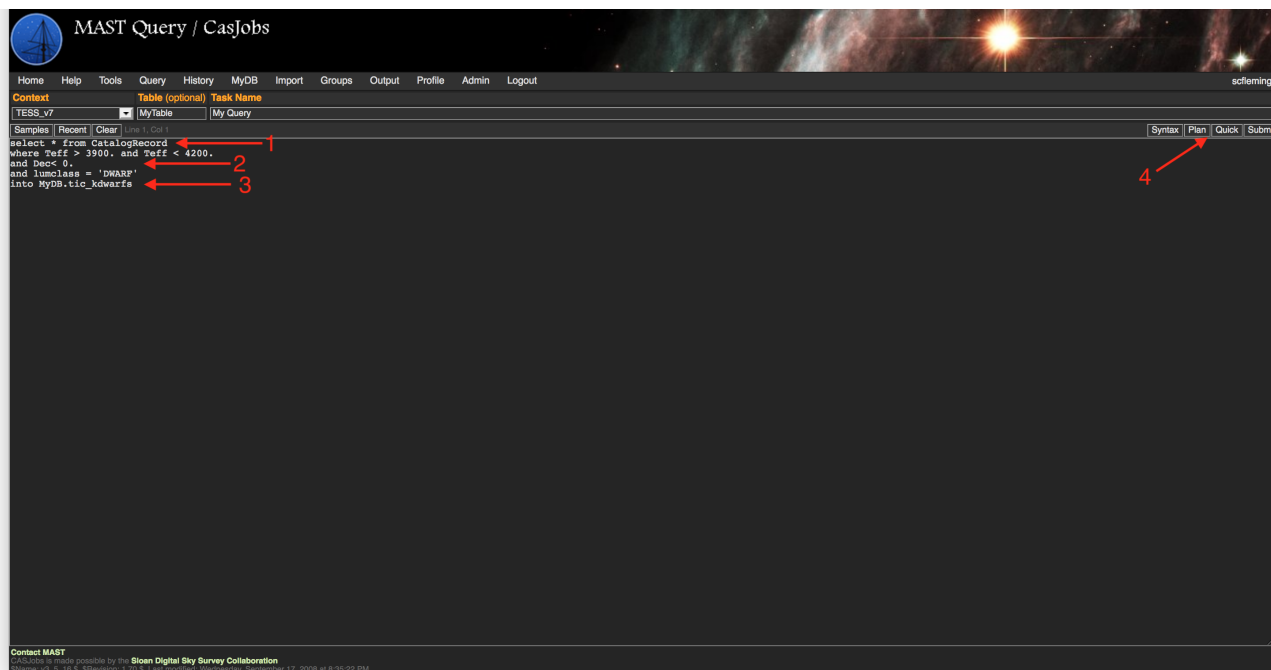
Submit

Contact MAST

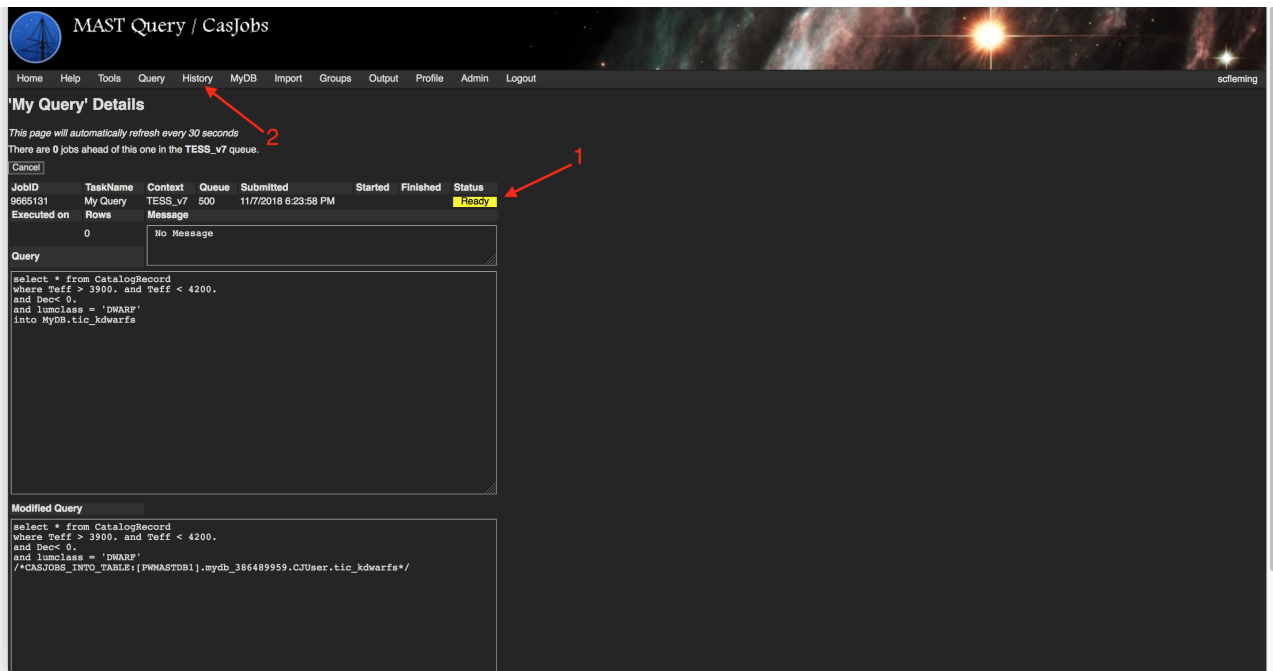
CASJobs is made possible by the Sloan Digital Sky Survey Collaboration

SHome: v3.9.18.5, Revision: 1.11.5, Last modified: Wednesday, September 17, 2008 at 8:35:22 PM

Step 4 - Enter Your Query: Once we have selected **TESS_v7** as our Context, we can write our query in the space below. This tutorial is not designed to give you a full introduction on how to write SQL queries, but we will explain our basic query. The first line selects all columns from the TIC, which is stored as a table called **catalogRecord** inside CasJobs (**Item #1**). The next three lines apply some conditions to our query, namely, we want all stars that have temperatures between 3900. and 4200. K, are in the southern hemisphere, and are classified as a dwarf based on their reduced proper motion (**Item #2**). The last line tells CasJobs to store the results of our query as a table called **tic_kdwarfs** into **MyDB** (**Item #3**). MyDB is the Context that holds any output tables you make using CasJobs, and is your own personal workspace where you can write (create) and drop (remove) tables. On the upper right (**Item #4**), you can check that your syntax is valid SQL before running a job with the **Syntax** button. The **Quick** button allows you to run a SQL query directly on this page, provided the job takes less than 60 seconds to run and doesn't use too much memory. Finally, the **Submit** button will send a query to the job manager, allowing you to submit any query to the processing queue. Even if the job takes a long time to run, once submitted to the queue, you can exit CasJobs and return at any time to check on the status or get your output table once finished. This query must use the **Submit** button, since it won't finish in less than 60 seconds.



Step 5 - Monitoring Job Status: After you **Submit** a job to the queue, you will be brought to this page, which will continuously refresh every 30 seconds, allowing you to monitor the status of your job (**Item #1**). You can also manually refresh this page if you want to get a status update faster, or visit the **History** tab at any time if you want to leave the CasJobs page and come back later. When a job is finished, it will show up in blue as **Finished**. If a job fails for some reason, it will show up in red as **Failed**. You can see your entire job submission history by visiting the **History** tab at the top (**Item #2**).



MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

'My Query' Details

This page will automatically refresh every 30 seconds
There are 0 jobs ahead of this one in the TESS_v7 queue.

Cancel

JobID	TaskName	Context	Queue	Submitted	Started	Finished	Status
9665131	My Query	TESS_v7	500	11/7/2018 6:23:58 PM			Ready

Executed on: 0
Message: No Message

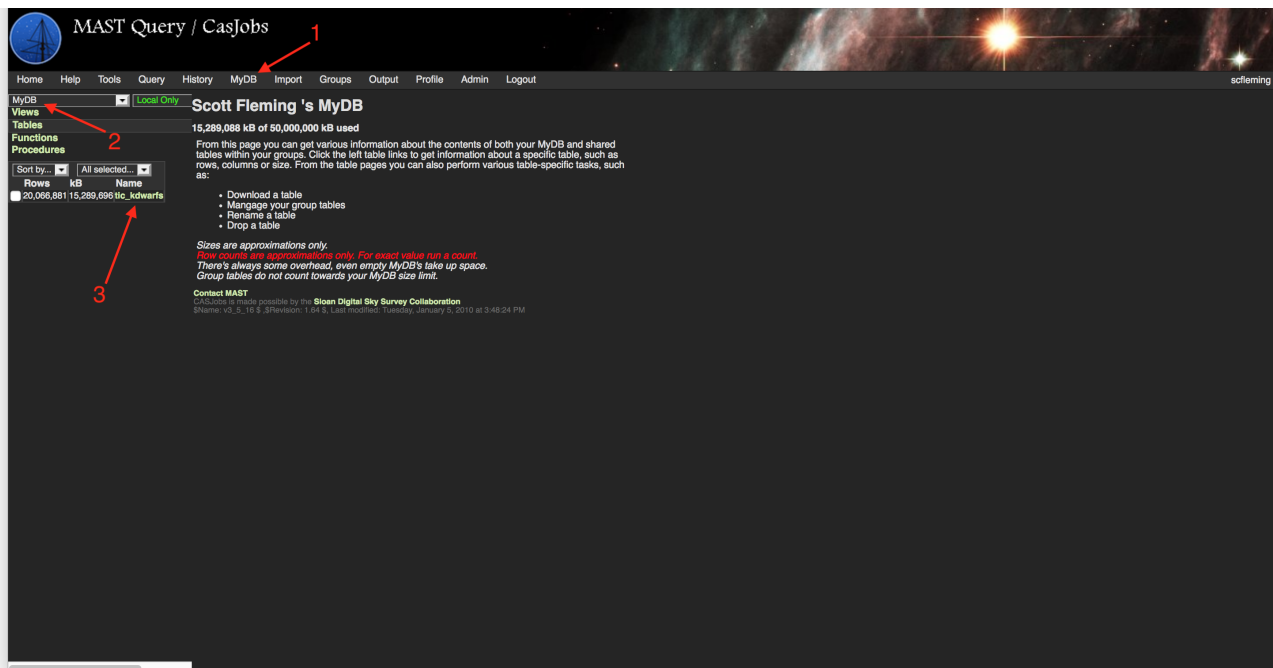
Query

```
select * from CatalogRecord
where Teff > 3900. and Teff < 4200.
and Dec < 0.
and lunclass = 'DWARF'
into MyDB.tic_kdwarfs
```

Modified Query

```
select * from CatalogRecord
where Teff > 3900. and Teff < 4200.
and Dec < 0.
and lunclass = 'DWARF'
/*CASJOB INFO_TABLE:[PMMASTDB1].mydb_386489959.CJUser.tic_kdwarfs*/
```

Step 6 - Accessing Your Output Tables: The **MyDB** tab (Item #1) is an important section of CasJobs, because it allows you to get to your output tables and see the available tables provided by MAST. Similarly to the **Query** tab, a drop-down Context menu allows you to swap between available Contexts (Item #2). In this example, we'll select **MyDB** from the drop-down menu, where we will see our output from the query we just ran (Item #3). If a table is "in progress", it will appear in blue, otherwise a table that is finished will appear in yellow. Our query has resulted in some 20 million K dwarfs in the catalog, way too large for other MAST interfaces.



MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

MyDB Local Only

Scott Fleming's MyDB

15,289,088 KB of 50,000,000 KB used

From this page you can get various information about the contents of both your MyDB and shared tables within your groups. Click the left table links to get information about a specific table, such as rows, columns or size. From the table pages you can also perform various table-specific tasks, such as:

- Download a table
- Manage your group tables
- Rename a table
- Drop a table

Sizes are approximations only.
Row counts are approximations only. For exact value run a count.
There's always some overhead, even empty MyDB's take up space.
Group tables do not count towards your MyDB size limit.

Contact MAST
CasJobs is made possible by the Sloan Digital Sky Survey Collaboration
\$Name: v3.5.10 \$ \$Revision: 1.04 \$, Last modified: Tuesday, January 5, 2010 at 3:46:24 PM

Views	Functions	Procedures
15,289,088 KB of 50,000,000 KB used		

Rows	kB	Name
20,066,881	15,289,696	tic_kdwarfs

Step 7 - Examining Your Output Table: We can explore what's in a table by selecting it from the list. If we click on the **tic_kdwarfs** link, it will load the table in the **Explore** section (Item #1), where there are several further options available to us.

MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

MyDB Local Only

Views tic_kdwarfs

Functions

Procedures

Sort by: All selected

Rows KB Name

20,066,881 15,289,696 tic_kdwarfs

Contains ~20,066,881 rows (~15,289,696 kB)

Notes Sample Job Plot PPlot Download Publish Neighbors Rename Drop

Table Schema type [size]

ID	version	HIP	TYC	UCAC	TWOMASS	SDSS	ALLWISE	GAIA	APASS	KIC	objType	typeSrc	ra	dec
bigint [8]	varchar [8]	int [4]	varchar [12]	varchar [10]	varchar [20]	bigint [8]	varchar [20]	varchar [20]	varchar [30]	int [4]	varchar [16]	varchar [16]	float [8]	float [8]

Notes

No notes found

New Note

Add Note

Step 8 - Displaying A Table Sample: If we click on the **Sample** link, we will be able to see the table schema (column names and data types) as well as a few random rows to get a sense of what the table contains (**Item #1**).

MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

MyDB Local Only

Views tic_kdwarfs

Functions

Procedures

Sort by: All selected

Rows KB Name

20,066,881 15,289,696 tic_kdwarfs

Contains ~20,066,881 rows (~15,289,696 kB)

Notes Sample Job Plot PPlot Download Publish Neighbors Rename Drop

Table Schema type [size]

ID	version	HIP	TYC	UCAC	TWOMASS	SDSS	ALLWISE	GAIA	APASS	KIC	objType	typeSrc	ra	dec
bigint [8]	varchar [8]	int [4]	varchar [12]	varchar [10]	varchar [20]	bigint [8]	varchar [20]	varchar [20]	varchar [30]	int [4]	varchar [16]	varchar [16]	float [8]	float [8]

1

Step 9 - Job Information: If we click on the **Job** link, we will be able to see information about the query used to create the table. In particular, the exact query used is located at the bottom (**Item #1**), along with the ability to re-submit this query back to the **Query** tab, making it easy to regenerate or update a query at any time in the future!

MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

MyDB Local Only tic_kdwarfs

Contains ~20,066,881 rows (~15,289,696 kB)

Notes Sample Job Plot TPlot Download Publish Neighbors Rename Drop

Table Schema type (size)

ID	version	HIP	TYC	UCAC	TWOMASS	SDSS	ALLWISE	GAIA	APASS	KIC	objType	typeSrc	ra	dec
bigint [8]	varchar [8]	int [4]	varchar [12]	varchar [10]	varchar [20]	bigint [8]	varchar [20]	varchar [20]	varchar [30]	int [4]	varchar [16]	varchar [16]	float [8]	float [8]

'My Query' Details

Resubmit Job

JobID	TaskName	Context	Queue	Submitted	Started	Finished	Status
9685141	My Query	TESS_v7	500	11/7/2018 6:28:02 PM	11/7/2018 6:28:04 PM	11/7/2018 6:38:31 PM	Finished

Executed on Rows Message

TESS_v7 long 20066881 Query Complete

Query

```
select * from CatalogRecord
where Teff > 3900. and Teff < 4200.
and Dec < 0.
and lumclass = 'DWARF'
into MyDB.tic_kdwarfs
```

Modified Query

```
select * from CatalogRecord
```

Step 10 - Exporting Your Results: If we click on the **Download** link, we will be able to export our table of results in a variety of formats, including CSV text files and FITS binary tables (**Item #1**). Once you hit **Go**, you'll be sent to the Output tab, where your file will be prepared for downloading. Note you may need to periodically refresh the page until your file is ready for downloading.

MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

MyDB Local Only tic_kdwarfs

Contains ~20,066,881 rows (~15,289,696 kB)

Notes Sample Job Plot TPlot Download Publish Neighbors Rename Drop

Table Schema type (size)

ID	version	HIP	TYC	UCAC	TWOMASS	SDSS	ALLWISE	GAIA	APASS	KIC	objType	typeSrc	ra	dec
bigint [8]	varchar [8]	int [4]	varchar [12]	varchar [10]	varchar [20]	bigint [8]	varchar [20]	varchar [20]	varchar [30]	int [4]	varchar [16]	varchar [16]	float [8]	float [8]

Table Download

From here you may download your table in a particular format. First choose the file format you'd like, then click 'Go'.

Comma Separated Values

Go

Step 11 - Viewing Other Tables In CasJobs: As mentioned previously, you can also see the content of MAST-provided tables by changing the **Context** drop-down menu (**Item #1**). If we change it to the **TESS_v7** Context, we'll see the available TESS mission tables, including the TIC (listed as the **catalogRecord** table), and versions of the exoplanet CTL. If we click on any of these links, we can further explore these tables on the right side of the page. If we click on the **Notes** link, we can see a description of the table and a summary of the table schema (**Item #2**). You can even download the catalogs in .csv or .fits format if you want, using the same export function used to save our query results table.

MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

TESS_v7

Views
Tables
Functions
Procedures

Sort by... [v] No actions...

Rows: 472,844,724 rows (~619,049,672 KB)

3,648,012 3,152,688 rows CTLv07_01
3,751,521 2,945,472 rows CTLv07_02

catalogRecord

Contains ~472,844,724 rows (~619,049,672 KB)

Notes [Sample]

Table Schema type [text]

ID	version	HIP	TYC	UCAC	TWOMASS	SDSS	ALLWISE	GAIA	APASS	KIC	objType	typeSrc	ra	dec
bigint [8]	varchar [8]	int [4]	varchar [12]	varchar [10]	varchar [20]	bigint [8]	varchar [20]	varchar [20]	varchar [30]	int [4]	varchar [16]	varchar [16]	float [8]	float [8]

Notes

7/5/2018 4:39:35 PM

TESS Input Catalog (TIC) V7

Column Name	Data Type	Description
ID	bigint[8]	TESS Input Catalog ID
version	varchar[8]	Version Identifier
HIP	int[4]	Hipparcos ID
TYC	varchar[12]	Tycho2 ID
UCAC	varchar[10]	UCAC4 ID
TWOMASS	varchar[20]	2MASS ID
SDSS	bigint[8]	SDSS DR9 ID
ALLWISE	varchar[20]	ALLWISE ID
GAIA	varchar[20]	GAIA ID
APASS	varchar[30]	APASS ID
KIC	int[4]	Kepler Input Catalog ID
objType	varchar[10]	Object Type (STAR)
typeSrc	varchar[10]	Source Of Object Type (cooldwarfs)
ra	float[8]	Right Ascension J2000 (deg)
dec	float[8]	Declination J2000 (deg)
POStag	varchar[12]	Source Of Positions (2MASSEX1)
pmRA	real[4]	Proper Motion in RA (mas/yr)
e_pmRA	real[4]	Uncertainty Of Proper Motion in RA (mas/yr)
pmDEC	real[4]	Proper Motion in DEC (mas/yr)
e_pmDEC	real[4]	Uncertainty Of Proper Motion in DEC (mas/yr)
PMlag	varchar[12]	Source Of PM (lycho2)
plx	real[4]	Parallax (mas)
e_plx	real[4]	Uncertainty Of Parallax (mas)
PMlag	varchar[12]	Source Of Parallax (mas)
galong	float[8]	Galactic Longitude (deg)
galat	float[8]	Galactic Latitude (deg)

Step 12: Similarly, we can use the **Sample** link to see a few random rows of the table (Item #1). This is a great way to get a quick look at a table, even a very large one, before writing any queries.

MAST Query / CasJobs

Home Help Tools Query History MyDB Import Groups Output Profile Admin Logout

TESS_v7

Views
Tables
Functions
Procedures

Sort by... [v] No actions...

Rows: 472,844,724 rows (~619,049,672 KB)

3,648,012 3,152,688 rows CTLv07_01
3,751,521 2,945,472 rows CTLv07_02

catalogRecord

Contains ~472,844,724 rows (~619,049,672 KB)

Notes [Sample]

Table Schema type [text]

ID	version	HIP	TYC	UCAC	TWOMASS	SDSS	ALLWISE	GAIA	APASS	KIC	objType	typeSrc	ra	dec
bigint [8]	varchar [8]	int [4]	varchar [12]	varchar [10]	varchar [20]	bigint [8]	varchar [20]	varchar [20]	varchar [30]	int [4]	varchar [16]	varchar [16]	float [8]	float [8]

30088870	2018010	null	null	null	00025269-0000298	null	J00025269-0000298	2546047061062000298	38078269	null	STAR	2mass	0.711822	0.008293	tingla	4.99532	2.17440	-16.2684	2.1684	
30088872	2018010	null	451-000083	1237663784197865281	J000239.844+000213.2	2546047061062000298	38078269	null	STAR	2mass	0.685114	0.037125	tingla	18.3844	2.11802	-30.5648	2.1160	2.11802	-30.5648	
30088876	2018010	null	null	00025308-0002583	1237663784197865402	J000253.09+000258.2	2546046957982793984	null	STAR	2mass	0.721191	0.046928	tingla	15.7925	2.30524	-10.5008	2.3052	2.30524	-10.5008	
30088877	2018010	null	null	00024302-0003006	1237663784197865384	J000243.32+000300.6	2546047026421748352	null	STAR	2mass	0.680523	0.050176	tingla	5.61402	2.17028	-16.2986	2.1706	2.17028	-16.2986	
30088879	2018010	null	null	00024823-0004123	1237663784197865964	J000248.27+000412.3	2546047232860717056	null	STAR	2mass	0.700964	0.070099	tingla	-4.04827	2.28828	-22.2828	2.2882	2.28828	-22.2828	
30088880	2018010	null	null	00025624-0002227	1237663784197865408	J000256.25+000222.7	254604833830797568	null	STAR	2mass	0.734358	0.106315	tingla	1.3892	2.13139	-20.7554	2.1313	2.13139	-20.7554	
30088881	2018010	null	null	00025533-0004306	1237663784197865511	J000255.37+000430.6	254604833830797568	null	STAR	2mass	0.730894	0.108378	tingla	2.07021	3.02697	-4.77295	3.0267	3.02697	-4.77295	
30088883	2018010	null	null	00032379-0007208	1237663784197750955	J000323.76+000720.8	25460403266500672860	null	STAR	2mass	0.849126	0.122442	tingla	-11.3759	2.25704	-20.7485	2.2569	2.25704	-20.7485	
30088884	2018010	null	null	00032186-0007087	1237663784197751059	J000321.89+000707.9	2546049470538582912	null	STAR	2mass	0.841108	0.119084	tingla	null	null	null	null	null	null	
30088886	2018010	null	null	00032924+0002220	1237663784197750984	J000329.24+000222.0	2546040157803083840	null	STAR	2mass	0.853025	0.089492	tingla	4.72696	2.32933	-15.8376	2.3292	2.32933	-15.8376	
30088889	2018010	null	null	00030874+0002354	1237663784197750915	J000308.74+000235.4	254600040037300608	null	STAR	2mass	0.786444	0.043183	tingla	8.38098	2.27684	-2.6922	2.2768	2.27684	-2.6922	
30088896	2018010	null	451-000074	00031352+0001041	1237663784197750689	J000313.55+000104.9	254600022280144384	38078271	null	STAR	2mass	0.696263	0.017983	tingla	24.7814	2.11602	-3.121	2.1160	2.11602	-3.121
30084502	2018010	null	null	00021050+0000241	1237663784197820002	J000210.50+000024.2	2546024005677531392	null	STAR	2mass	0.543765	0.067505	tingla	-21.453	2.39498	-7.43314	2.3847	2.39498	-7.43314	
30084503	2018010	null	null	00021256+0000170	null	J000212.56+000017.1	null	null	STAR	2mass	0.552365	0.007455	2mass	null	null	null	null	null	null	
30084504	2018010	null	null	00022749-0008947	1237663784197858491	J000227.49+000894.7	2546051630007289760	null	STAR	2mass	0.614375	0.154641	tingla	78.6971	3.01649	-45.8928	3.0163	3.01649	-45.8928	
30084502	2018010	null	null	00021246+0005004	1237663784197820416	J000212.49+000495.9	2546027833968578944	null	STAR	2mass	0.551921	0.083467	tingla	null	null	null	null	null	null	
30084503	2018010	null	null	00020444+0004249	1237663784197820000	J000204.46+000424.5	2546028197565662848	null	STAR	2mass	0.518523	0.07359	tingla	5.27348	3.16302	-9.50206	3.1626	3.16302	-9.50206	
30084504	2018010	null	451-000058	00021917+0004196	1237663784197819835	J000219.18+000419.7	2546027783548692176	38514294	null	STAR	2mass	0.627024	0.072131	tingla	12.4912	2.11602	-3.29335	2.1160	2.11602	-3.29335
30084505	2018010	null	null	00021369+0004036	1237663784197819827	J000213.69+000404.4	2546027750898061632	null	STAR	2mass	0.557049	0.067675	tingla	13.604	2.30255	-10.1767	2.3025	2.30255	-10.1767	
30084506	2018010	null	null	00021270+0002320	1237663784197819825	J000212.71+000232.2	2546027644730622720	null	STAR	2mass	0.552948	0.06830	tingla	3.31475	2.18642	-14.9887	2.1864	2.18642	-14.9887	
30084507	2018010	null	null	00021343+0003186	1237663784197819893	J000213.48+000319.0	2546027304212452982	null	STAR	2mass	0.553669	0.055326	tingla	5.32023	2.32903	-5.31124	2.3293	2.32903	-5.31124	
30084508	2018010	null	null	000210185+0002272	1237663784197819817	J000201.83+000227.5	2546027304212441728	null	STAR	2mass	0.507711	0.040885	tingla	2.15569	2.30524	-12.3359	2.3052	2.30524	-12.3359	
30084509	2018010	null	null	00021871+0001431	1237663784197820493	J000218.71+000143.4	2546020414311644072	null	STAR	2mass	0.577988	0.028686	tingla	null	null	null	null	null	null	
30084501	2018010	null	null	00023620+0001060	null	J000236.19+000106.0	null	null	STAR	2mass	0.562649	0.01834	2mass	null	null	null	null	null	null	
30088871	2018010	null	null	00025072-0001026	1237663784197865389	J000250.71+000102.2	2546046751824338048	null	STAR	2mass	0.711366	0.017374	tingla	-10.7659	2.28208	-41.2999	2.2820	2.28208	-41.2999	
30088872	2018010	null	null	00025523+0002213	1237663784197865507	J000255.28+000221.3	254604689653309440	null	STAR	2mass	0.730175	0.030984	tingla	39.5673	2.8408	-10.4404	2.8404	2.8408	-10.4404	
30088876	2018010	null	null	00024606+0004113	null	J000246.05+000411.3	null	null	STAR	2mass	0.691957	0.089818	2mass	null	null	null	null	null	null	
30088882	2018010	null	null	00025895-0007486	null	J000257.05+000749.0	null	null	STAR	2mass	0.737324	0.13018	2mass	null	null	null	null	null	null	
30088889	2018010	null	null	00032027-0003371	1237663784197750947	J000320.28+000337.6	254600016374889068	null	STAR	2mass	0.634468	0.054741	tingla	3.83911	2.11604	-25.8202	2.1160	2.11604	-25.8202	
30088890	2018010	null	451-000072	00031252+0002431	1237663784197750947	J000312.53+000243.3	2546000194278872192	38078270	null	STAR	2mass	0.80218	0.045316	tingla	17.617	2.11602	-7.45355	2.1160	2.11602	-7.45355
30088897	2018010	null	null	00031784+0000180	1237663784197750937	J000317.83+000018.1	2546059197948428544	null	STAR	2mass	0.824247	0.040683	tingla	-17.2467	2.14854	-15.8774	2.1485	2.14854	-15.8774	
30088974	2018010	null	null	00024849+0000230	1237663784197865458	null	2546041297814783636	null	STAR	2mass	0.701942	0.041688	tingla	3.3207	2.30255	-1.33124	2.3025	2.30255	-1.33124	
30088875	2018010	null	451-000065	00024826+0002416	1237663784197865290	J000248.26+000241.2	2546047129781483392	38514353	null	STAR	2mass	0.701112	0.044902	tingla	-1.91173	2.11603	-0.122661	2.1160	2.11603	-0.122661
30088895	2018010	null	451-000078	00032824+0000705	1237663784197750983	J000328.24+000070.5	2546025650089376	38514414	STAR	2mass	0.655169	0.117662	tingla	5.82558	2.12842	-2.21578	2.1284	2.12842	-2.21578	
30088887	2018010	null	null	00032021+0003410	1237663784197750948	J000320.22+000341.0	2546000174056711680	null	STAR	2mass	0.834213	0.061398	tingla	5.88589	2.23331	-8.9534	2.2332	2.23331	-8.9534	
30088888	2018010	null	451-000075	00031422+0003365	1237663784197750978	J000314.23+000336.5	2546000181236580752	38078272	STAR	2mass	0.805293	0.06014	tingla	11.3019	2.11602	2.95122	2.1160	2.11602	2.95122	
30088891	2018010	null	null	00032256+0003384	1237663784197751034	J000322.58+000338.4	254600081573638328	null	STAR	2mass	0.844035	0.044004	tingla	83.12	2	-97.78	2	2	-97.78	
30088893	2018010	null	null	00032224+0002347	1237663784197751033	J000322.30+000233.9	254600081573638658	null	STAR	2mass	0.842701	0.042949	tingla	83.12	2	-97.78	2	2	-97.78	
30088894	2018010	null	null	00030840+0001483	null	J000308.40+000148.3	null	null	STAR	2mass	0.785003	0.030084	2mass	null	null	null	null	null	null	
30088895	2018010	null	451-000073	00031269+0001157	1237663784197750953	J000313.01+000115.5	254600002250160768	null	STAR	2mass	0.604138	0.051032	tingla	24.5477	2.11603	-10.1255	2.1160	2.11603	-10.1255	