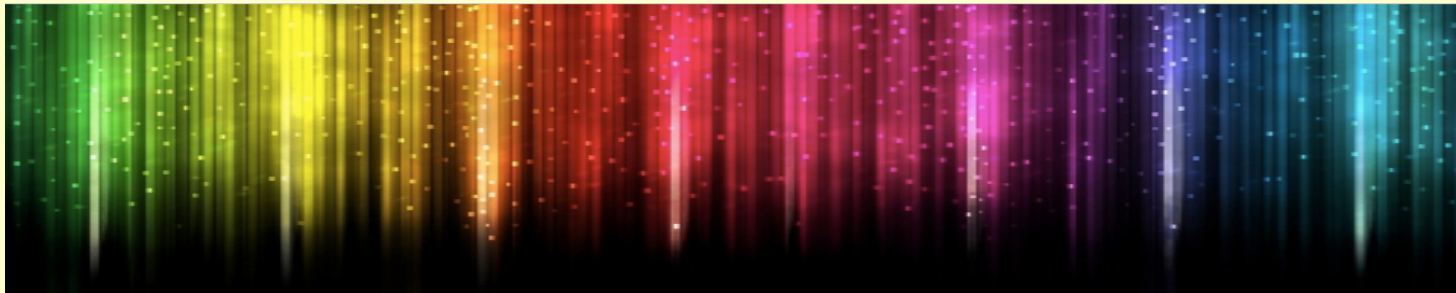




The New Target Search (“Kepler ColorsTable”)



Our Group:

Dorothy Fraquelli

Bernie Shiao

Myron Smith

Randy Thompson

Acknowledgments:

- *Galex Team*
- *Phil Lucas (UKIRT)*
- *Greiss/Steeghs (INT/KIS team)*
- *Everett/Howell/Kinemuchi (UBV)*
- *Sloan Project (SDSS/DR9)*



Magnitudes & colors for our KeplerColors Table

- ✓ 2MASS (JHK mags)
- ✓ UK_IRT (J' mags)
- ✓ New GALEX (in last delivery: NUV only)
- ✓ Everett/Howell/Kinemuchi – UBV
- ✓ Kepler-INT-Survey (“KIS”), Part 1
- ✓ SDSS/DR9 (this week)

To be delivered (dates uncertain):

- KIS /Part 2 (ugrizH α)
- panSTARRS - *griz,y, W*



Purposes:

1. Increase number of GO proposer targets.
2. Increase what we know about Kepler targets.*
 - o OB stars, Kepler Core study, M type stars, galaxies
 - o Better spectral, luminosity types (bracket Balmer jump)
 - o Spectral Energy Distributions (available UVOIR surveys)
3. Post-Kepler mission studies:
Make this a “Hubble Deep field” for Galactic star populations research for many years (range of Galactic latitudes: $5.1-21.7^\circ$).

*Province of Kepler Stellar Properties Working Group



Target Access tools at hand

1. New (“enhanced”) MAST Target Search form.
2. Greatly expanded CasJobs queries table.
“keplerObjectSearchWithColors” table in CasJobs:
<http://mastweb.stsci.edu/kplrcasjobs/>
includes new help files, sample queries, etc.



Catalog menu options:

- “KIC” only (default)
- Optical (add GALEX, KIS, UBV)
- All catalogs, including UKIRT

Filter on values of many color combinations

Kepler Target Search

[Archive Status](#) [\(Help\)](#)
[Field Descriptions](#)
 (See [Explanations](#) for more information)

[Standard Form](#) [File Upload Form](#)

Search [] Reset [] Clear Form []

Target Name [] **Resolver** [NED] **Radius (arcmin)** [0.04]
Right Ascension [] **Declination** [] **Equinox** [J2000]

Kepler_ID [] **Data Availability Flag** [] **Teff** []

Catalogs
 KIC Targets Only
 KIC + UBV + KIS Targets
 Targets from all Catalogs

Seasons on CCDs [any] **Min. Distance from Edge (px)** []

Color/Mag 1 [FUVNUV] **Value 1** [] **Color/Mag 2** [FUVNUV] **Value 2** [] **Condition flag** [All Targets]

User-specified field 1 [Field Descriptions](#) **User-specified field 2** [Field Descriptions](#)
 RA (J2000) [] RA (J2000) []

User-specified field 3 [Field Descriptions](#) **User-specified field 4** [Field Descriptions](#)
 RA (J2000) [] RA (J2000) []

Output Columns [up] [down] [remove] [reset]
 RA (J2000)
 Dec (J2000)
 Kepler_ID
 Data Availability Flag
 Seasons_on_CCD
 Teff
 Log_G
 E(B-V)
 g
 r

Sort By: [ang_sep ()] Reverse
 [Kepler_ID] Reverse
 [null] Reverse

Output Coords: Sexagesimal Degrees Hours

Output Format [HTML_Table]

Show Query Make Rows Distinct



New Target Search form

Kepler Target Search Explanations

The Kepler Target Search interface provides access to a 12.5 million row table created by MAST by joining entries from the Kepler Input catalog (KIC) with the Kepler Characteristics table (CT) and merging these with "associated" entries from the United Kingdom Infrared Telescope (IRT) project, the USNO catalog, GALEX, the Kepler Isaac Newton Telescope Survey (KIS), and the Everett KPNO (UBV) survey. The search interface allows users to find targets within the Kepler field of view (FOV) and allows searches on magnitudes, colors, and other parameters for both KIC and associated non-KIC targets.

This is the recommended interface for potential guest observers to locate possible targets for observation. GO proposers however should check on the target's position by either (or both) looking to one of our posted FFI images and seeing if it is on a chip, and (2) confirming this with the GO office. The links below provide more detailed information on the creation and contents of this database.

[Colors and Magnitudes \(Explanations & Caveats\)](#)

This page describes the magnitudes added from the various catalogs as well as results from comparing the various magnitudes and colors as a function of magnitude.

[Matching and false Identifications](#)

The procedure for associating a catalog object to a KIC object is described here. Issues with false identifications are also discussed.

[Associated Non-KIC Targets](#)

After associating catalog entries with KIC entries, a second matching process was performed to identify additional non-KIC targets which may be within the Kepler FOV. This procedure resulted in the addition of roughly 8 million new targets and is described here.

Detailed correlations between magnitudes and colors in their different systems

Perils of false and mis-matching

How we did the matches and guaranteed objects are on the detector



Kepler CasJobs

Extensive GO user help

SQL query box

MAST Query / CasJobs

Home Help GOHelp Tools Create Account Login

Home **Kepler GO Help**

Quick links

- Column Names for Kepler Colors
Column Descriptions for Kepler Colors
- Column Names for Kepler-GALEX Crossmatch
Column Descriptions for Kepler Colors

SQL Tutorials

- Intro SQL Tutorial
- Advanced SQL Tutorial
- Note: For the Advanced SQL Tutorial, CASJobs is based upon SQL Server Syntax

GO Help with MAST'S CasJobs Tool

SECTION 1: Extending requests beyond the Enhanced Kepler Target Search form

- Part 1: Introduction to the Kepler Colors Table
- Part 2: Downloads from the Kepler Colors Table
- Part 3: The Cookbook on CasJobs-Kepler Sample Queries

SECTION 2: Kepler-GALEX Crossmatch

- Part 1: Introduction
- Part 2: Downloads
- Part 3: The Cookbook on CasJob Sample Queries
- Part 4: Plots, correlations, and distributions
- Cautions about matchings

Contact MAST
CASJobs is made possible by the Sloan Digital Sky Survey Collaboration
\$Name: v3_5_16 \$, \$Revision: 1.24 \$, Last modified: Monday, December 12, 2011 at 10:40:20 AM

MAST Query / CasJobs

Home Help GOHelp Tools Query History MyDB Import Groups Output

Context **Table (optional)** **Task Name**

kepler MyTable_14 My Query

Samples Recent Clear Line 10, Col 5

```
select kic_kepler_id, g,r,i,u_kis,g_kis,r_kis,i_kis,U_UBV,B_UBV,V_UBV,
NUVg,FUVNUV, kic_ebminuv
into mydb.KOS_ugrikis_UBV_gi2pt5GLXnew
from keplerObjectSearchWithColors
where (g_kis - i_kis) < 2.5 and r_kis < 17.0 and
u_kis is not null and u_kis <> 0. and g_kis is not null and g_kis <> 0. and
r_kis is not null and r_kis <> 0. and i_kis is not null and i_kis <> 0. and
g is not null and g <> 0.0 and r is not null and r <> 0. and i is not null
and i <> 0. and U_UBV is not null and B_UBV is not null and V_UBV is not null
and kic_kepler_id is not null
order by ktawcKey
```



Supplement Pages (not in verbal presentation):

- KIS (Sloan) filter curves
- problems found with KIC magnitude comparisons
- Coverage, magnitude distribution for SDSS



Supplement Pages: INT filters, problems found with mag correlations

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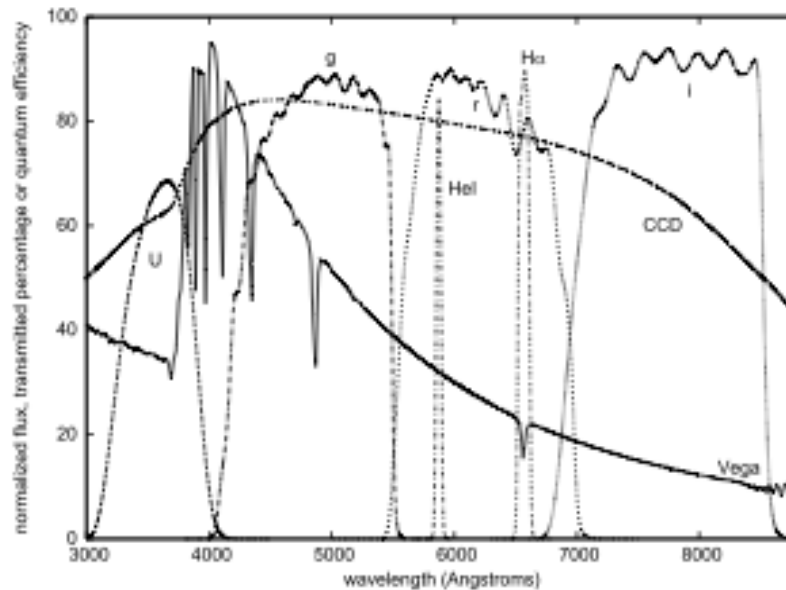
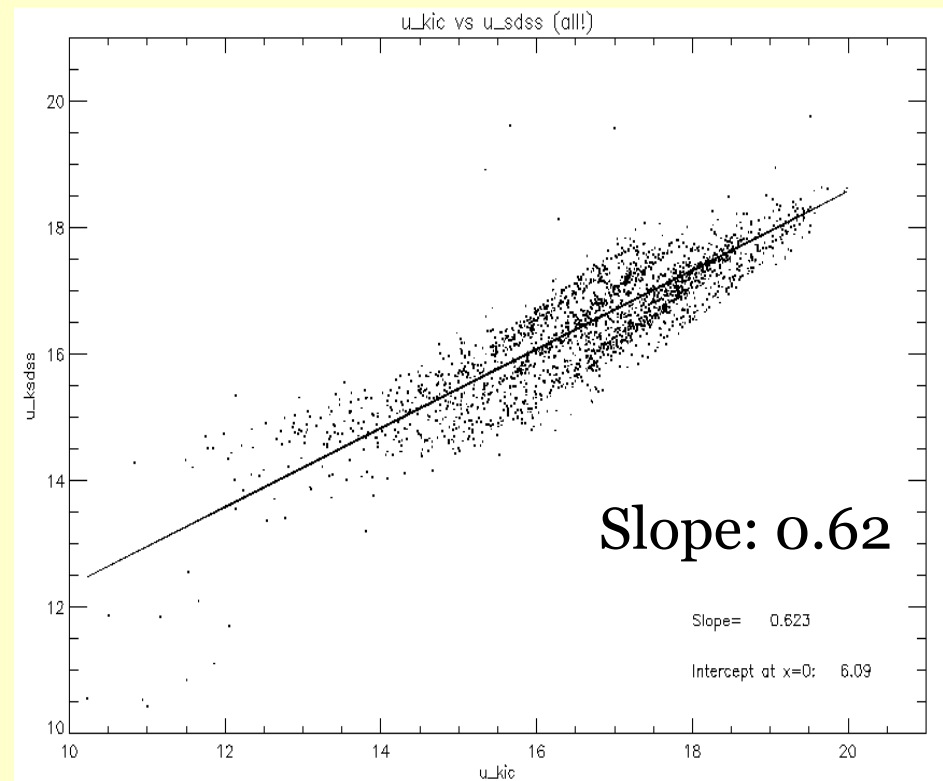
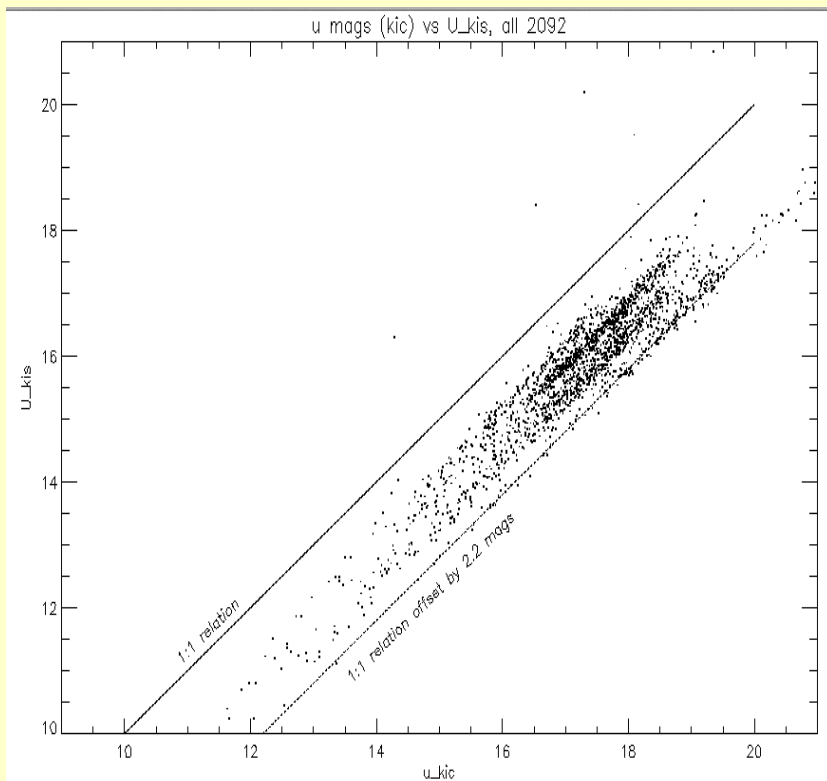


Figure 2. Filter efficiency curves of the *U*, *g*, *r*, HeI5875, $H\alpha$ and *i*-band filters used in the UVEX survey and IPHAS (dashed and dash-dotted curves), overplotted on to the spectrum of Vega (solid curve), together with the CCD-efficiency curve (dashed).



Compare u_{KIC} vs. U_{KIS} (left); U_{KIC} vs. u_{SDSS} (right)

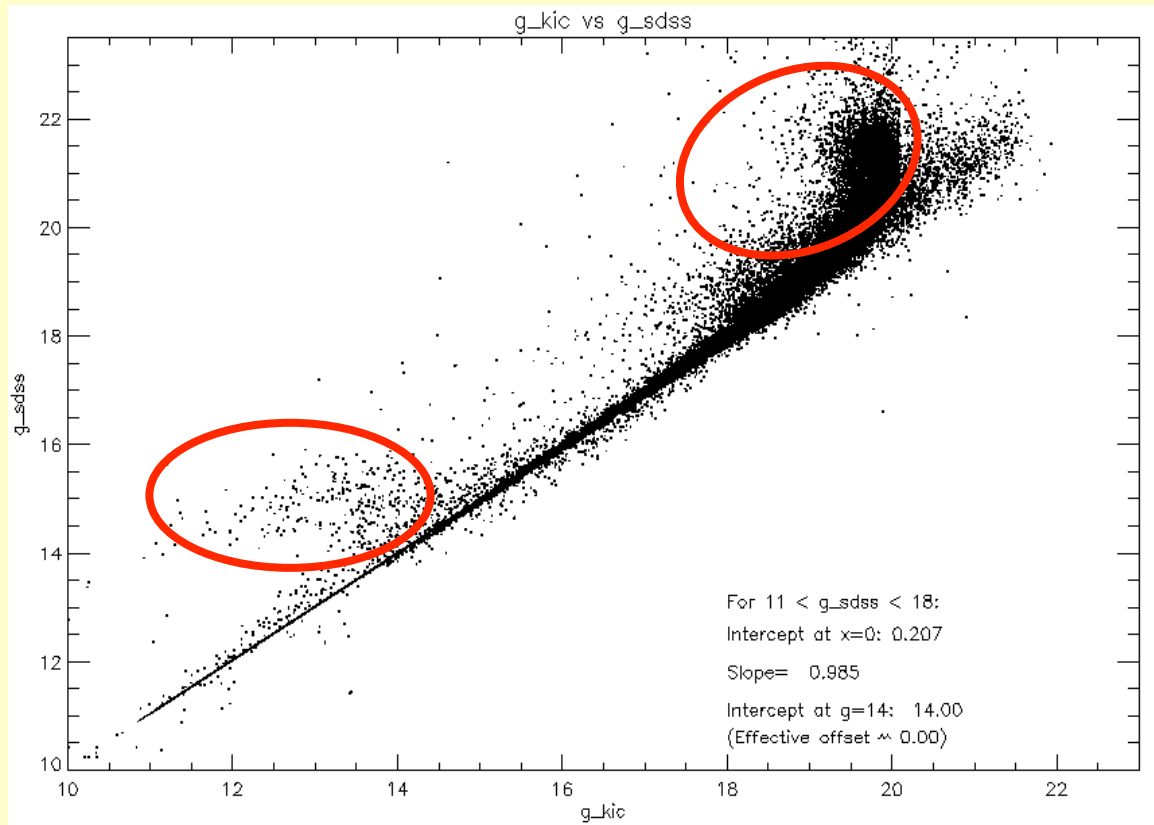


(KIC authors have asked MAST to kick out u_{KIC} from search page)



g_{KIC} vs. g_{SDSS} magnitudes

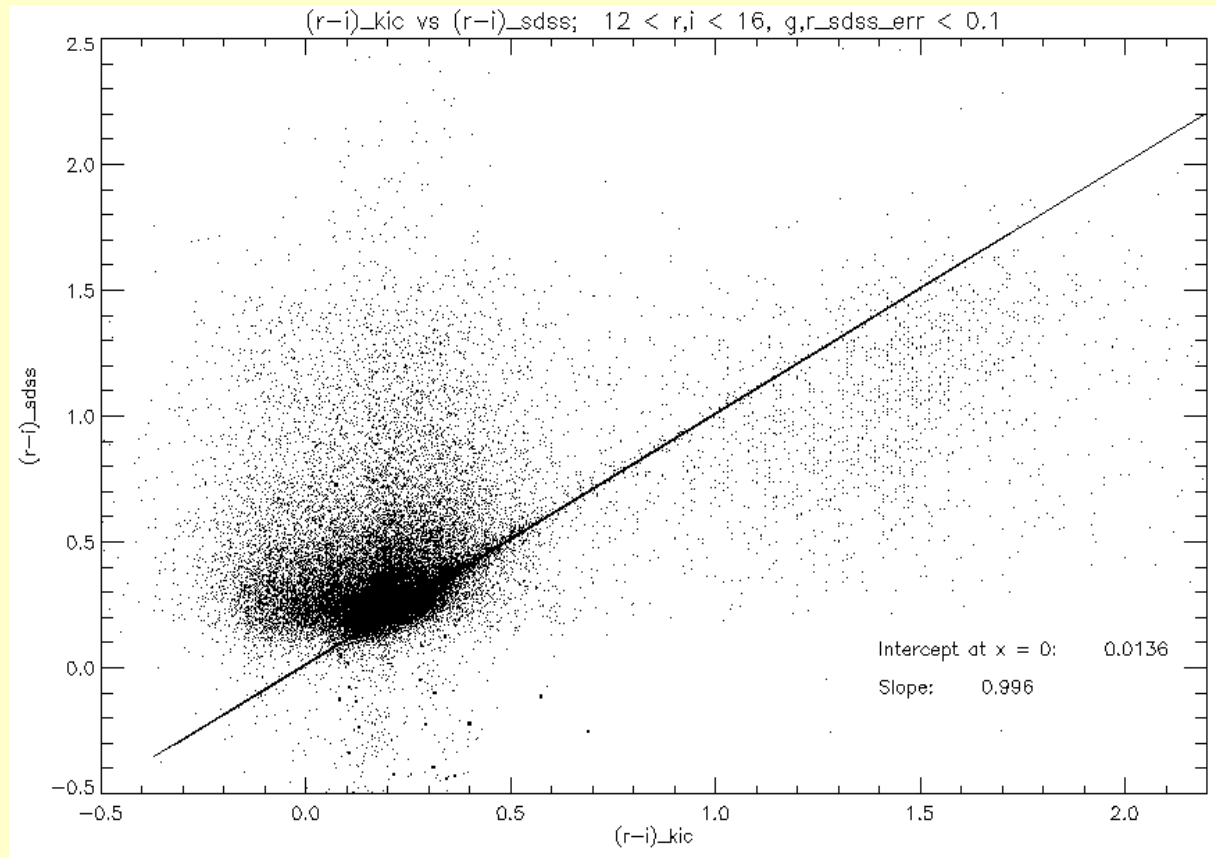
Left “flange”
comes from
SDSS data



Right “flange”
comes from
KIC data



$(r-i)_{\text{kic}}$ vs. $(r-i)_{\text{sdss}}$ plot (for 12 g, $r < 16$)



Scatter (from i) is unexplained! – not the usual culprits.



SDSS objects: distribution on sky and of r magnitudes

