

SDSS-V & Chandra Source Catalog

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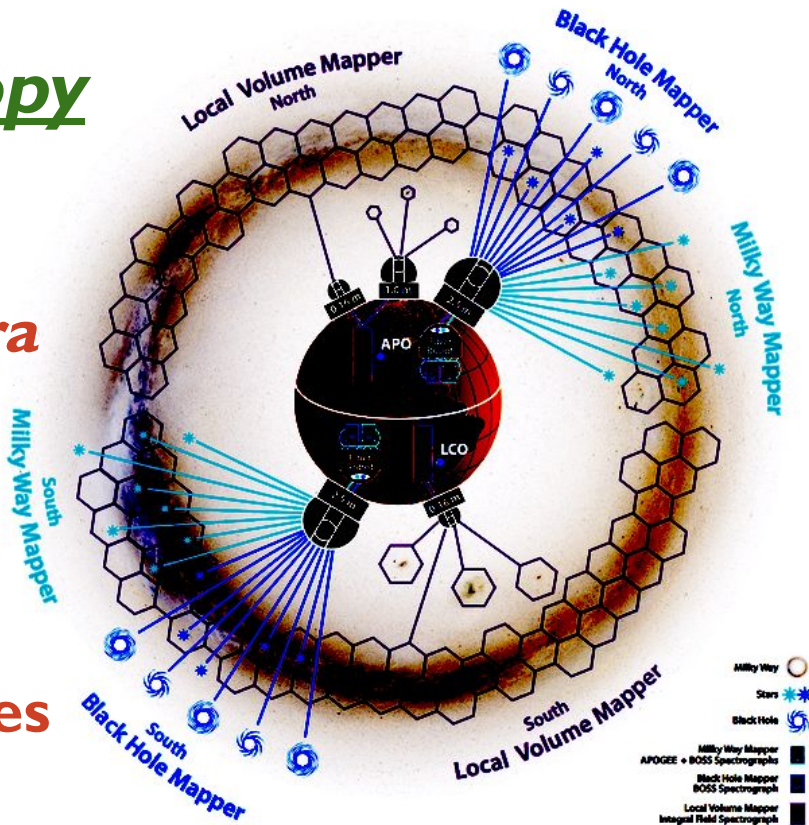
for the Nov 2022 CUC meeting

SDSS-V 2020 - 20257

<http://www.sdss.org/future>

All-Sky Spectroscopy

- ❑ **Black Hole Mapper**
 - *Repeat QSO spectra*
 - *eROSITA followup*
 - *$r < 21.5$ mag*
- ❑ **Milky Way Mapper**
 - *stars in IR at high-res*
 - *$H < 14$ mag*



SDSS-V, SAO + CXC

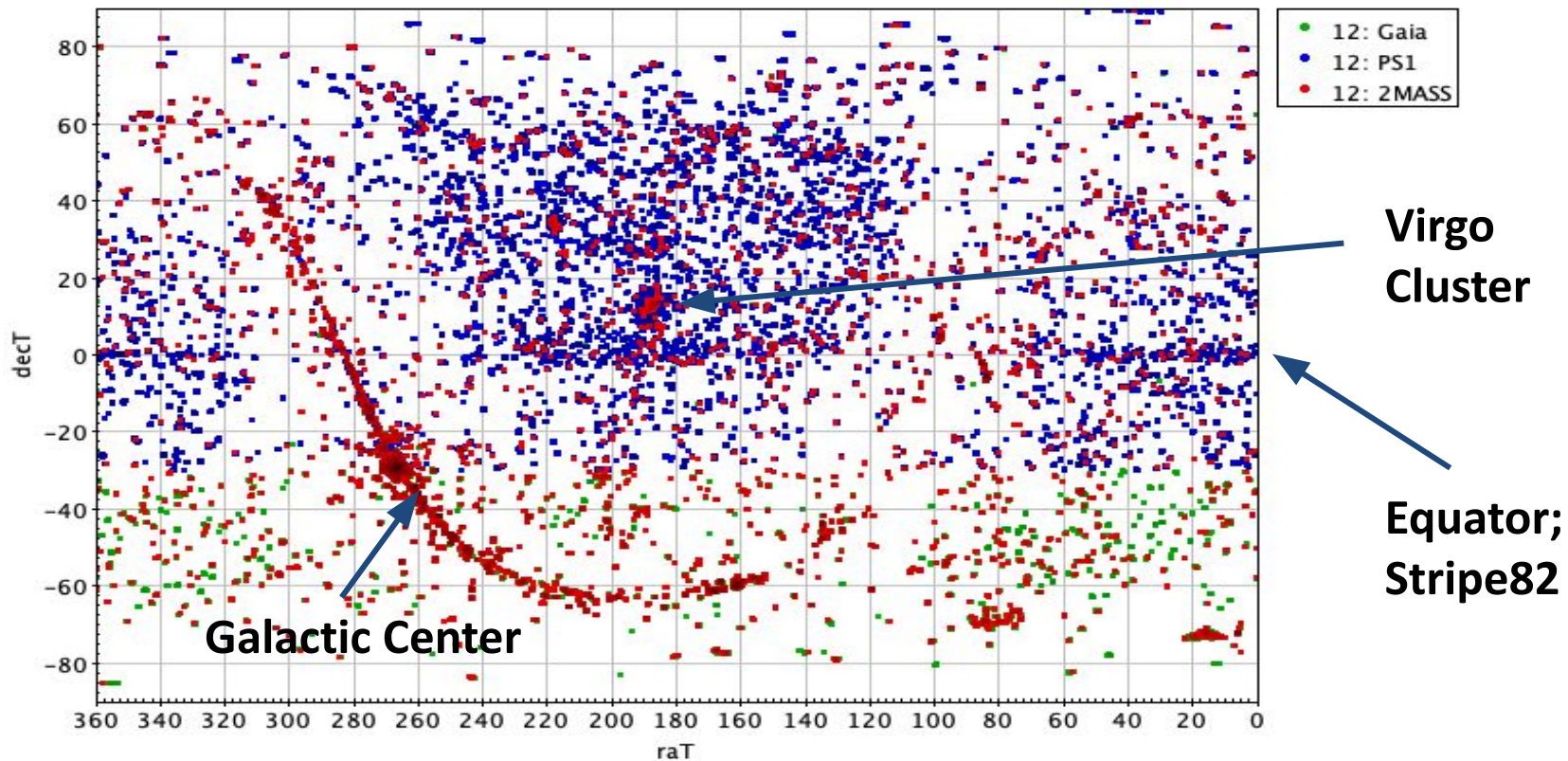
- ❑ **SAO joined SDSS-V as a full member: \$230k/yr for 4 years**
Includes the 50% funds from the CXC
- ❑ **CSC:**
 - ❑ **Only covers ~2% of sky**
 - ❑ **Much better sensitivity and spatial resolution than eROSITA!**
 - ❑ **~50% have opt/IR counterparts with mag <21**
- ❑ **Stellar and XRB CSC counterparts in the Galactic Plane will be a unique treasure trove**
- ❑ **CXC will serve SDSS-V data products (spectral properties and flux-calibrated digital spectra) to the community (unfunded)**

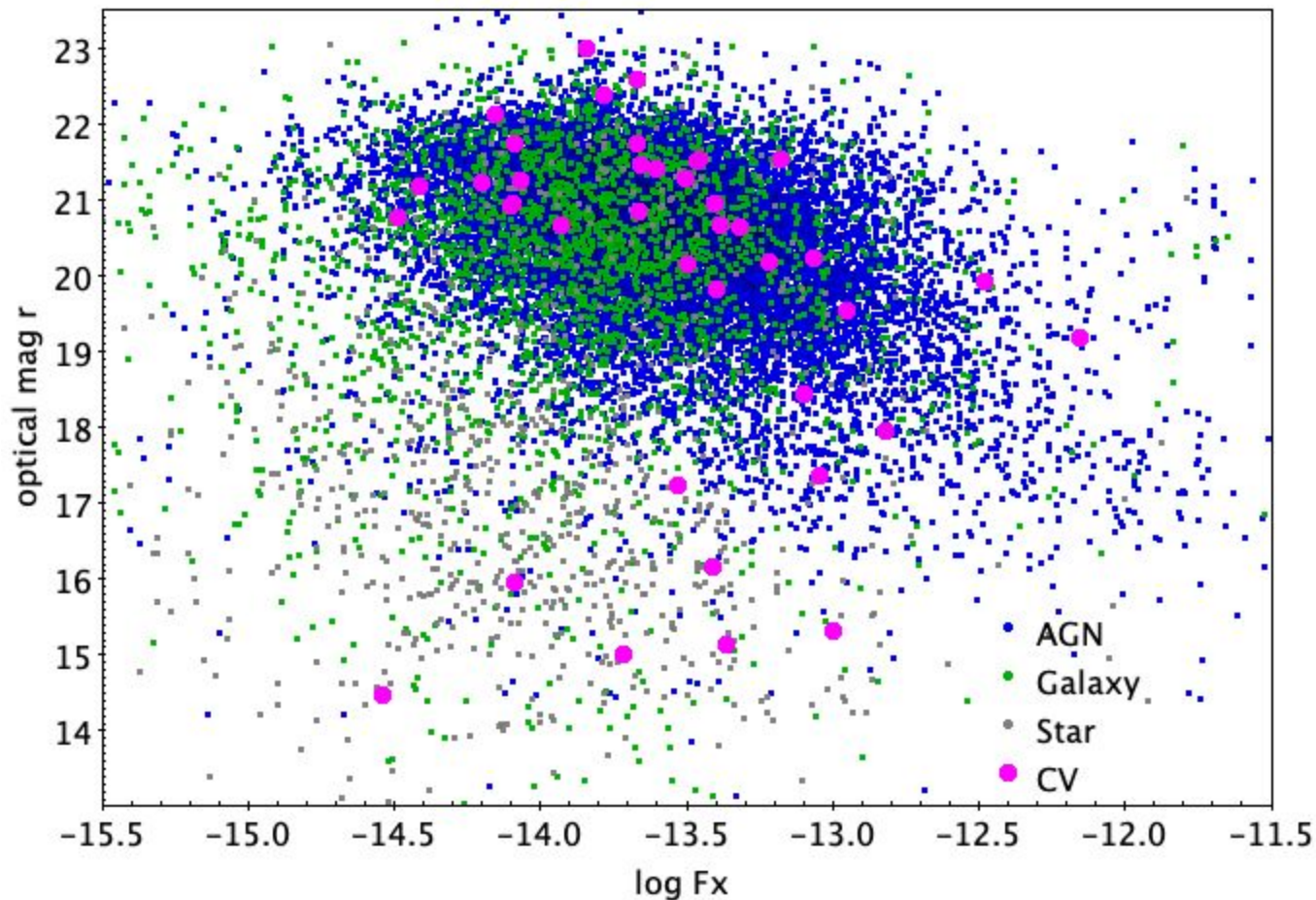
CSC2.0 Opt/IR Counterparts: Targets for SDSS-V Spectroscopy

- Started with CSC2.0
- We only include for matching the following magnitude ranges
 - GAIA DR2 $14 < G < 20$
 - PS $14 < (g \ || \ r \ || \ i \ || \ z) < 21.5$
 - 2MASS H ≤ 14
- 148k total candidate targets; 132k optical; 16k IR only
- Include a priority Pri, derived solely from the X-ray S/N xsn.
- Targeting simulations say expect ~40k spectra (cf.~ 300k eROSITA)
- About ~5k new spectra to date from SDSS-V

CSC Counterparts for SDSSV Spectroscopy

Equatorial Coordinates



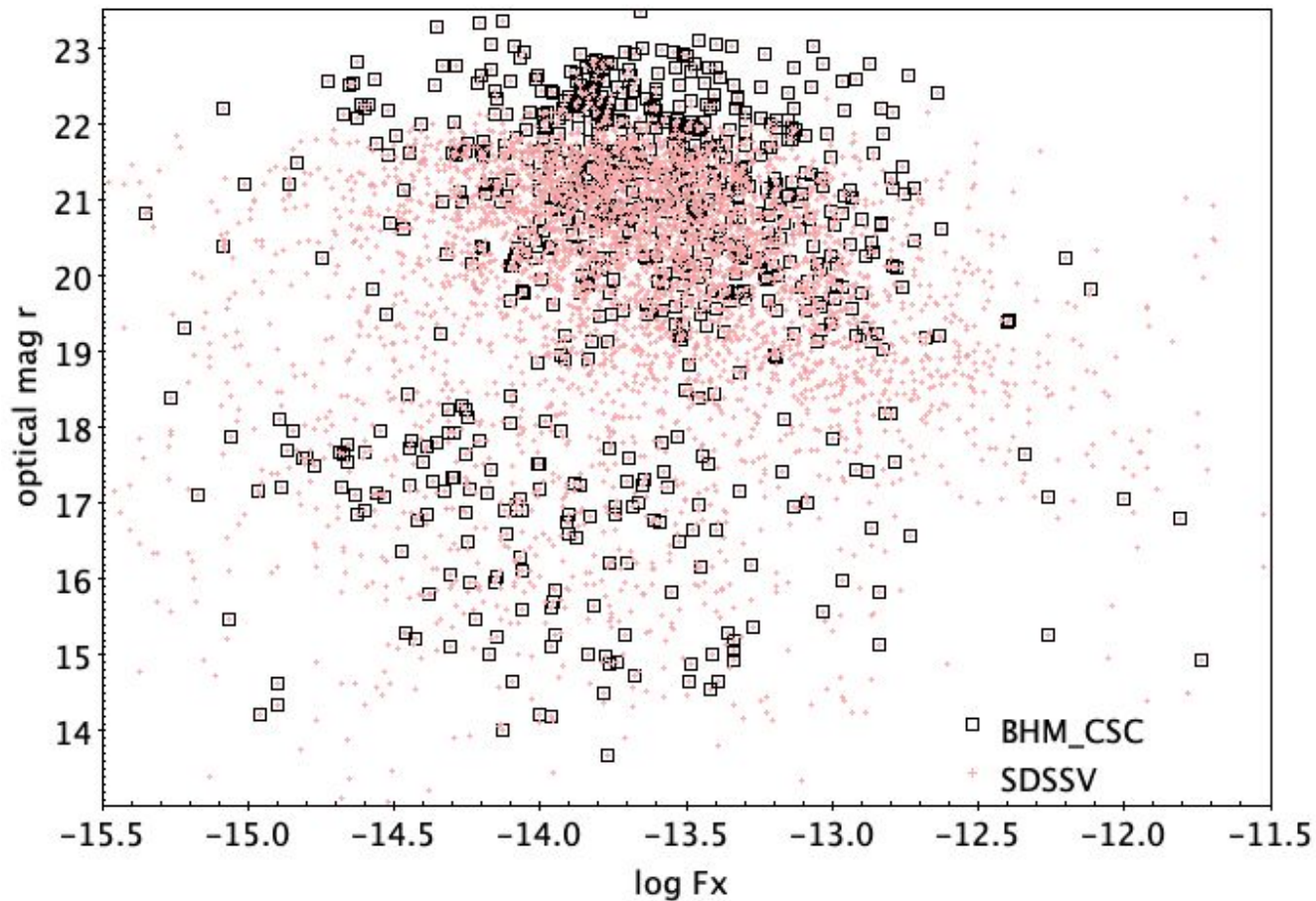


All Existing Matches

CSC2.1 2022 Oct
Matched (3") to
DR17 +
spAll-v6_0_9_
through 59764

14231 AGN
2473 Galaxies
817 Stars
44 CVs

17565



Only SDSS-V

CSC2.1 2022 Oct
Matched (3") to
DR17 +
spAll-v6_0_9_
through 59764

4887 SDSS-V
773 CSC

CSC2.1 Opt/IR Counterparts: Targets for SDSS-V Spectroscopy

- **Updating catalog with CSC2.1**
 - **317k \Rightarrow 390k sources** (23% more sources, mostly new sky regions)
 - **Gaia DR3 astrometric reference frame**
- **We match in priority order**

GAIA DR3	$14 < G < 20$
PS1 DR2	$14 < (g \ \ r \ \ i \ \ z) < 21.5$
Legacy DR10	$14 < (g \ \ r \ \ i \ \ z) < 21.5$
2MASS	$H \leq 14$
- **Expect ~180k total matches, perhaps 50k spectra**