

ASTROPHYSICAL VIRTUAL OBSERVATORY

***AVO Demonstration 2004:
Science Background to
Extragalactic Case***

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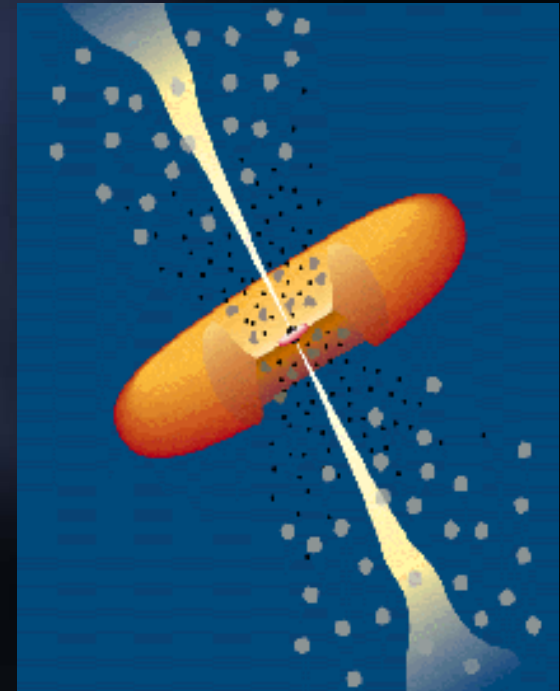
AVO Work Area 1 Manager

Extragalactic Case

Very focused problem: find high-power counterparts of Seyfert 2 galaxies, i.e., (optically) obscured (type 2) quasars.

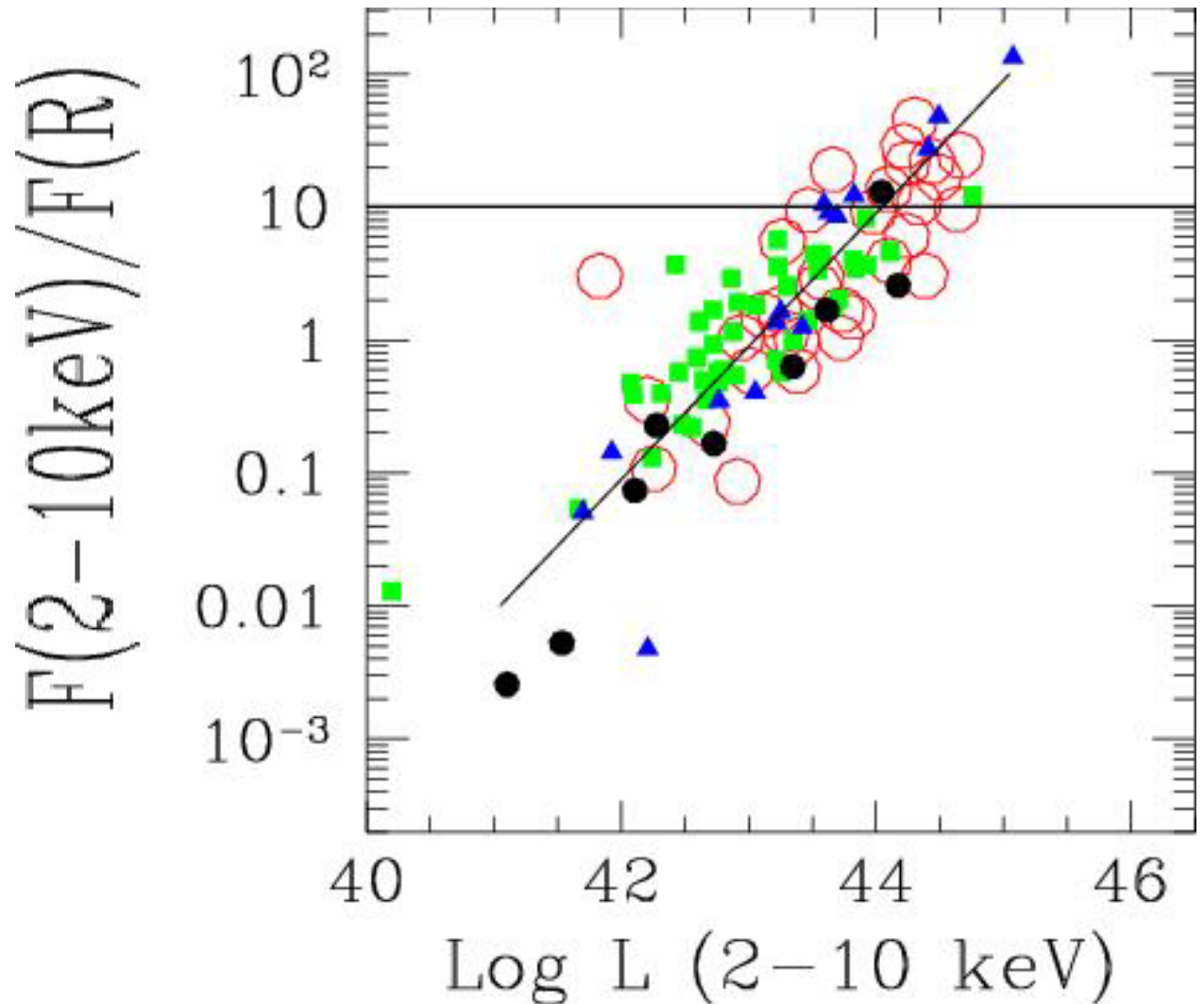
Based on HST/ACS images, VLT/FORS2 spectra, and Chandra catalogues of the CDFS and HDFN (GOODS) regions.

Start from X-ray data

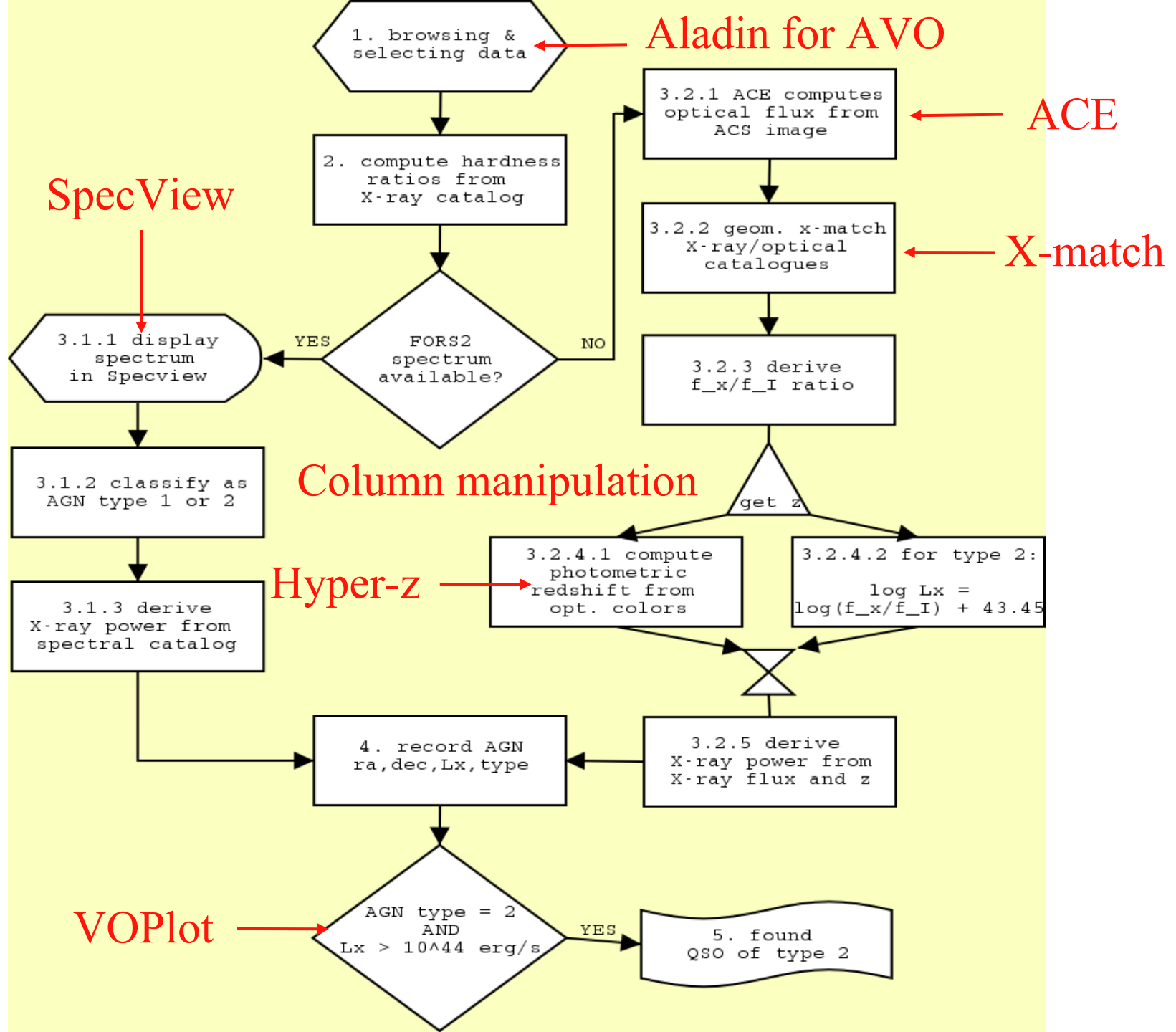


Extragalactic Case

1. Select sample of absorbed X-ray sources based on hardness ratio; Chandra X-ray catalogues for GOODS regions
2. Cross-correlate with optical catalogue
3. Derive (spectrum) or estimate $(f_x/f_I) L_x$
4. Type 2 sources with $L_x > 10^{42}$ erg/s are obscured AGN (too powerful for starburst); $L_x > 10^{44}$ erg/s implies obscured QSOs



Statistical correlation between L_x and X-ray-to-IR flux ratio for “non-type 1” objects (Fiore et al. 2003)



Science Results

after the demo ... :)

Extragalactic Case

- ❖ AVO is doing cutting-edge science by exploiting the data beyond “classical” identification limits ($R > 24 - 25$)
- ❖ AVO provides “statistical” identification of sources using multiwavelength information
- ❖ VO tools enable astronomers to reach into new areas of parameter space with little effort
- ❖ Very strong science case!
- ❖ “AVO should enable everyone to compete with the GOODS team (on their data)”
[G. Gilmore, SWG meeting, June 2002]