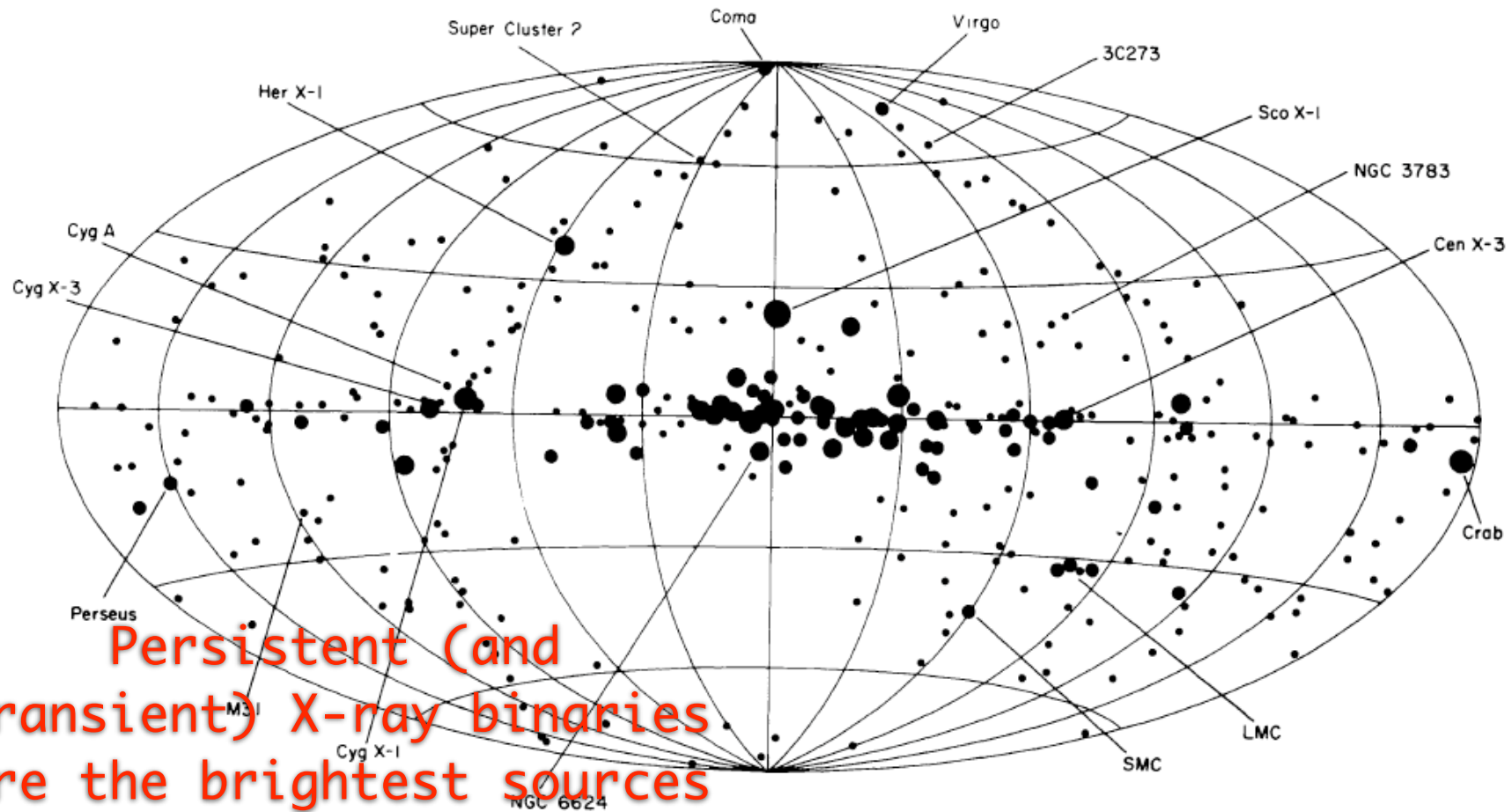


Neutron stars with WFXT

Sergio Campana (Brera)

Forth Uhuru Catalog

THE FOURTH UHURU CATALOG

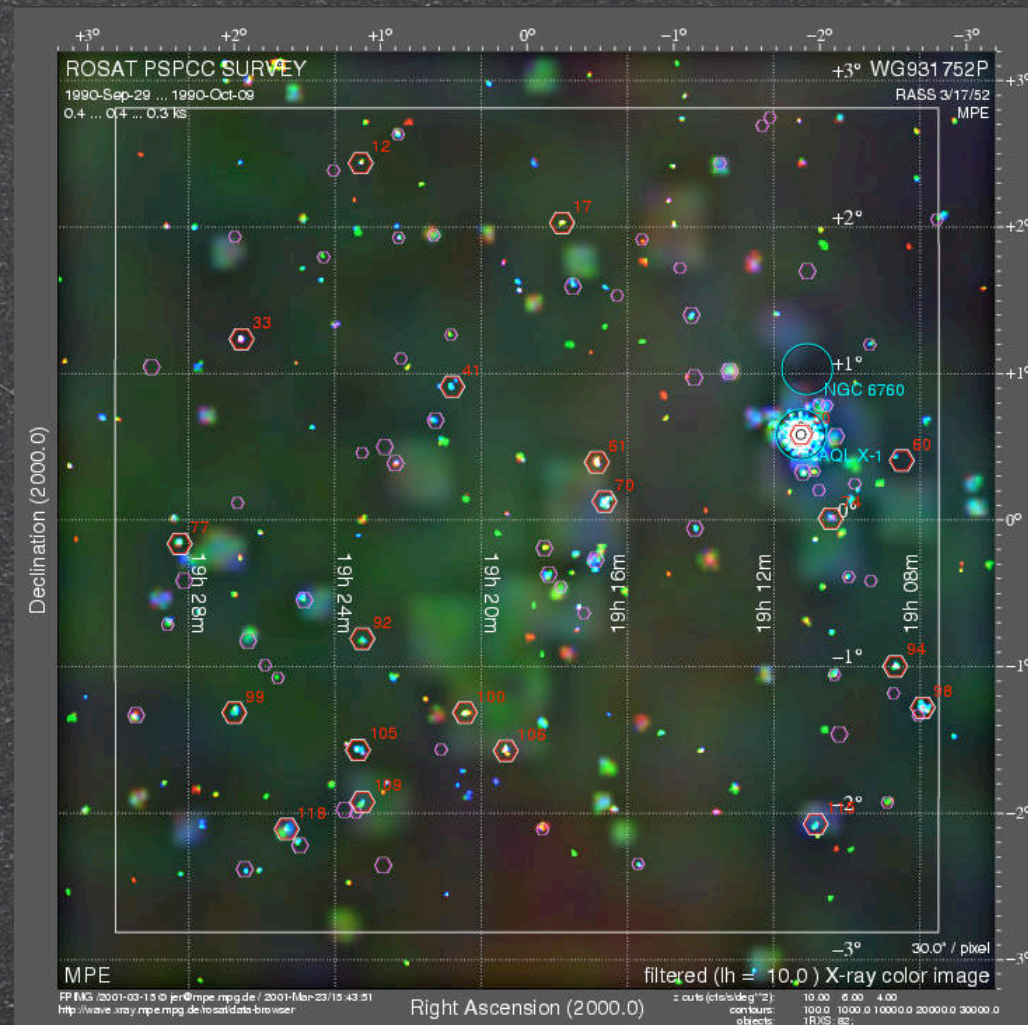


Persistent (and transient) X-ray binaries are the brightest sources of the X-ray sky

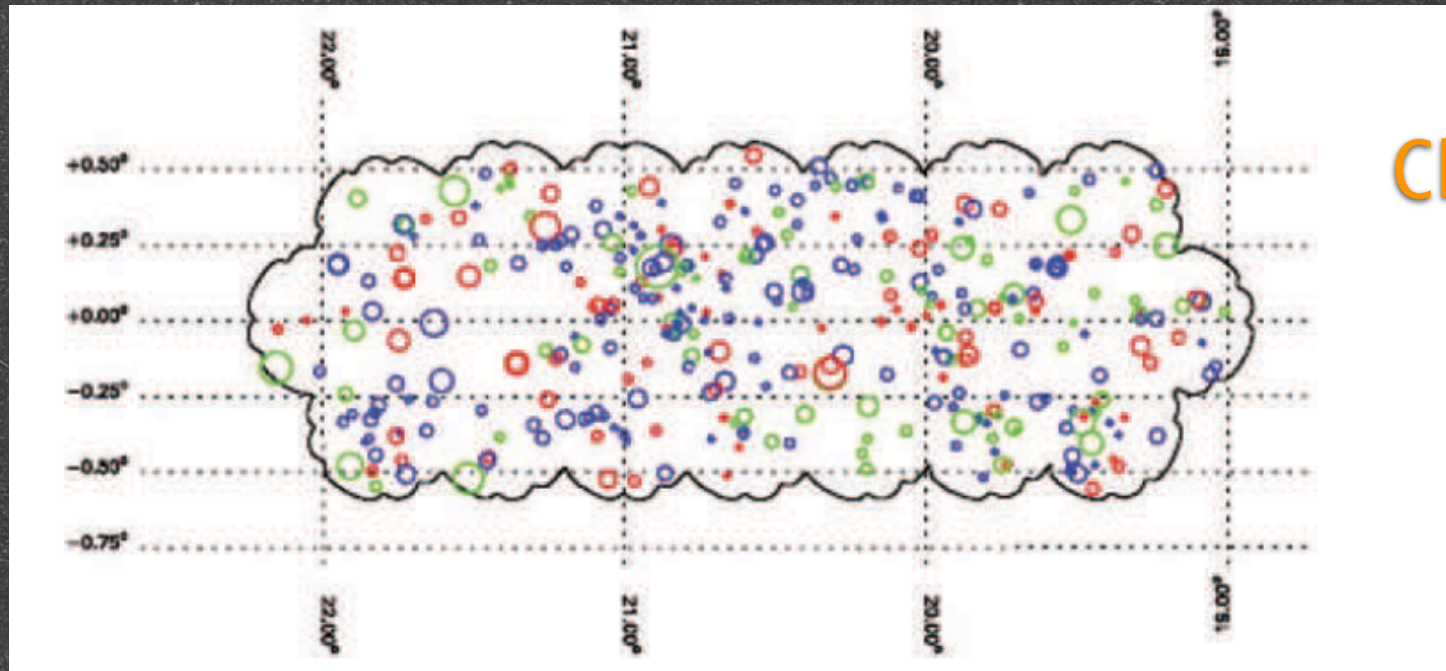
Soft X-ray field (0.5-2 keV)

ROSAT galactic field

Active stellar coronae



Hard X-ray field (2-10 keV)



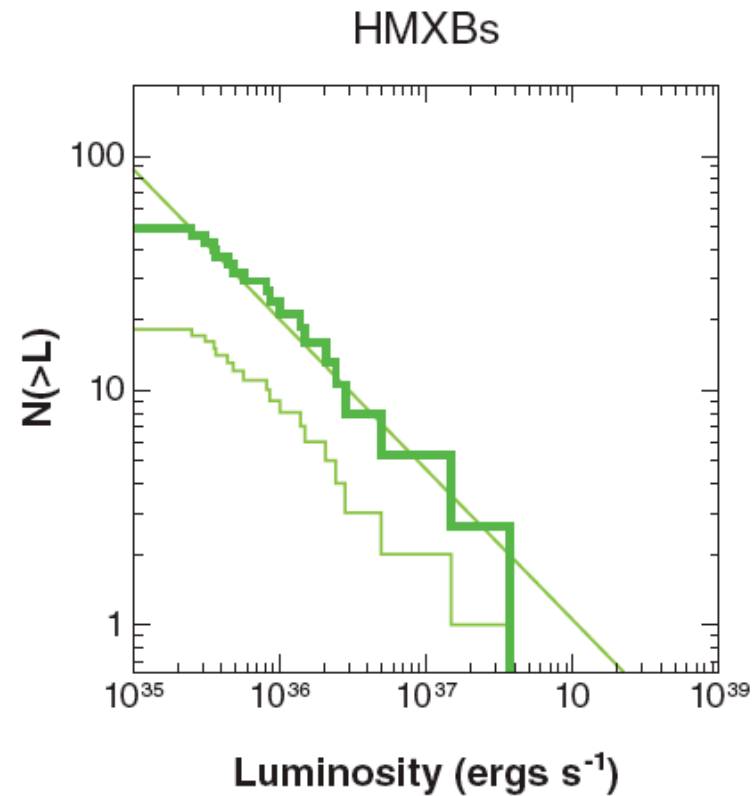
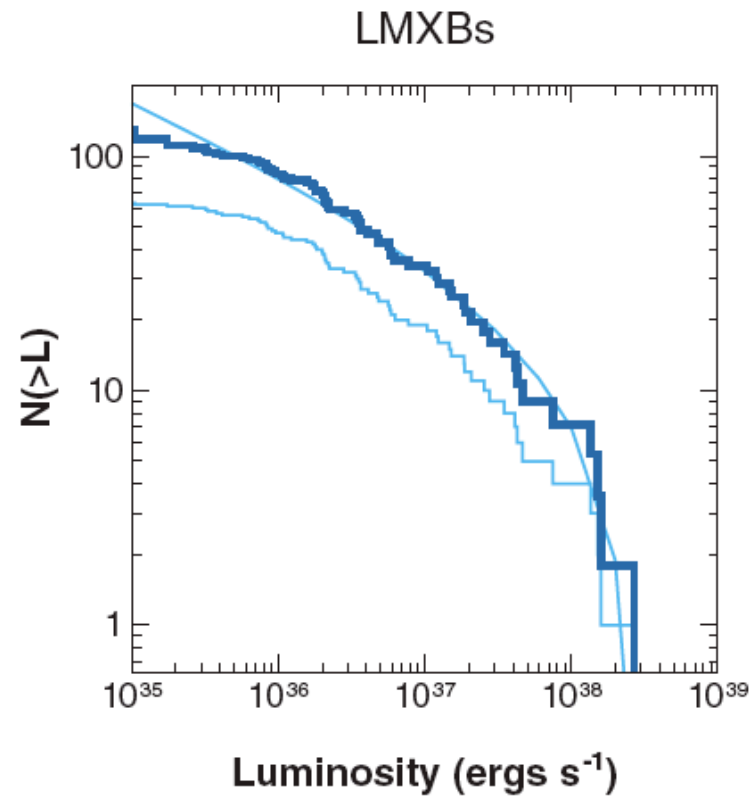
Champ Lane
XGPS

Cataclysmic variables
X-ray binaries (high & low mass)
Active stars

Why a survey?

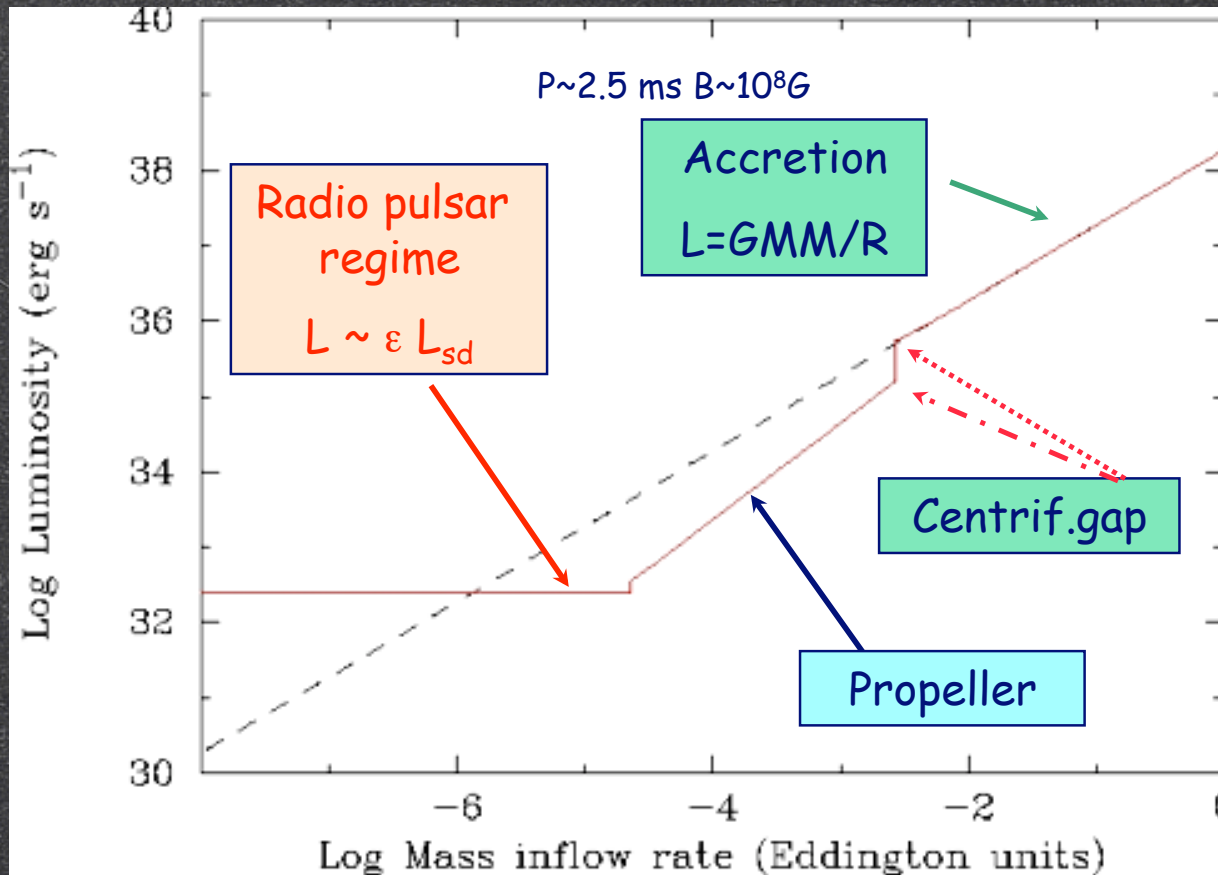
- determination of space density and scale height of CVs (related to the rate of novae and to the formation of LMXRBs)
- evolutionary path of low and high mass X-ray binaries
- HMXRBs are a proxy of star formation (SF) so they can probe SF in different regions of the Galaxy or in outside galaxies

Luminosity functions



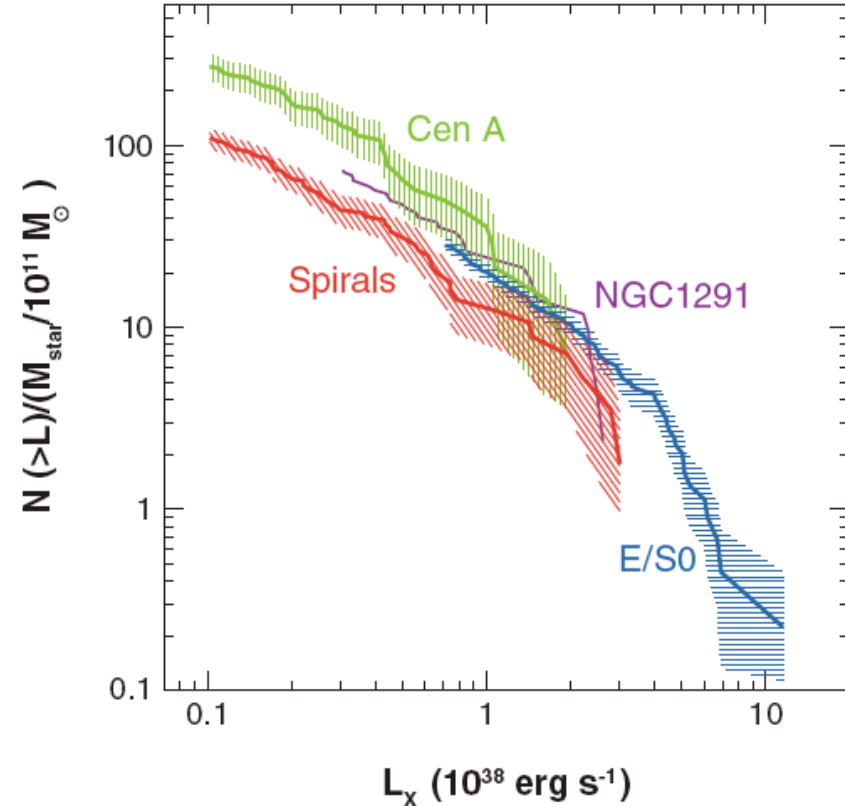
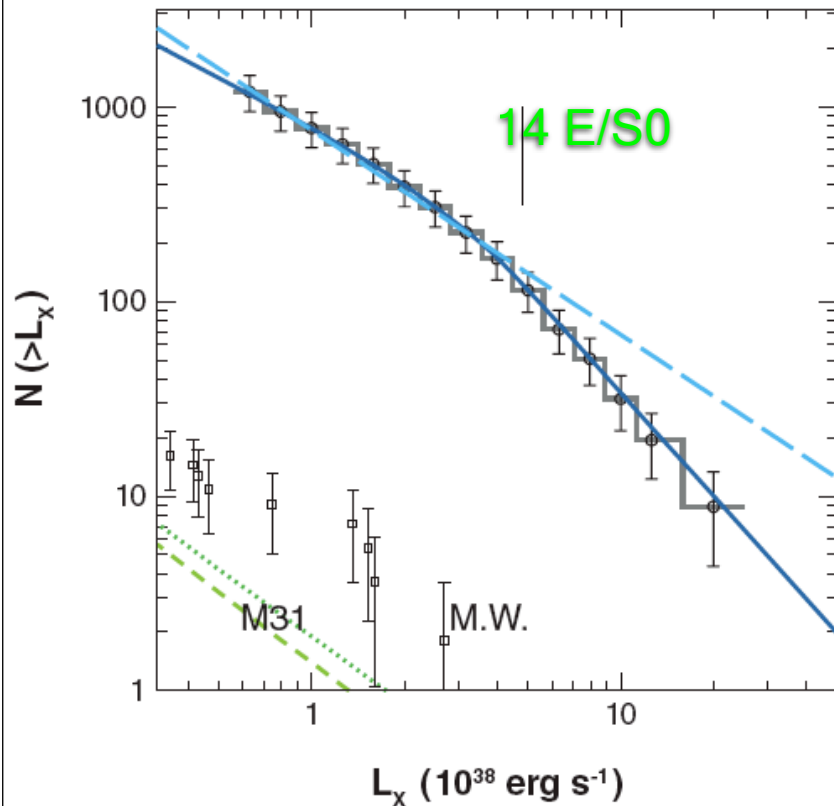
Our Galaxy

Faint logN-logS



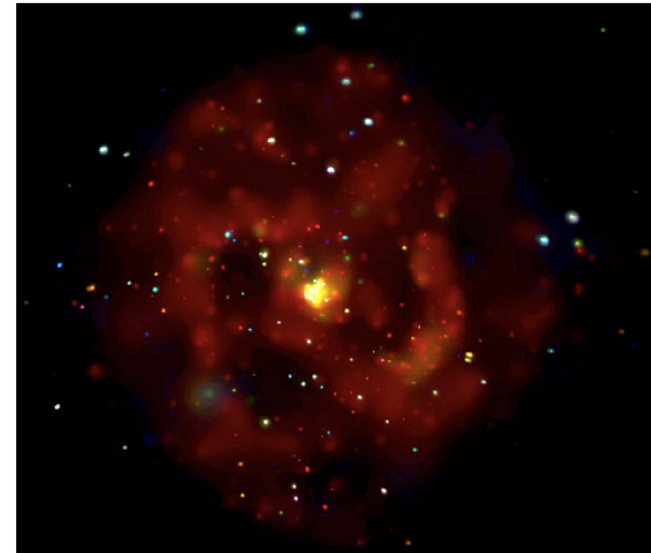
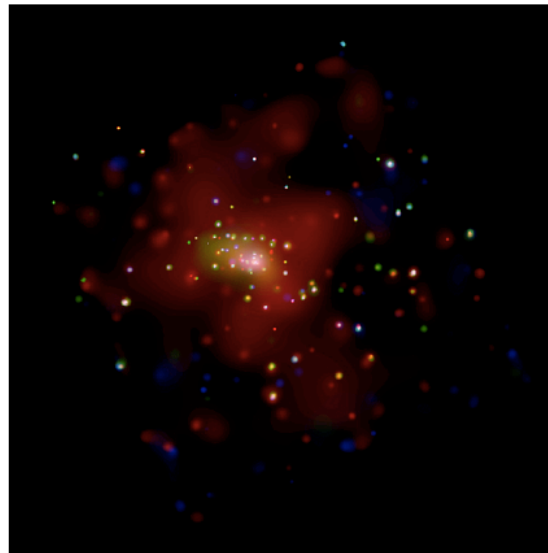
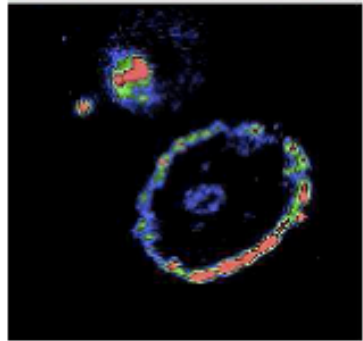
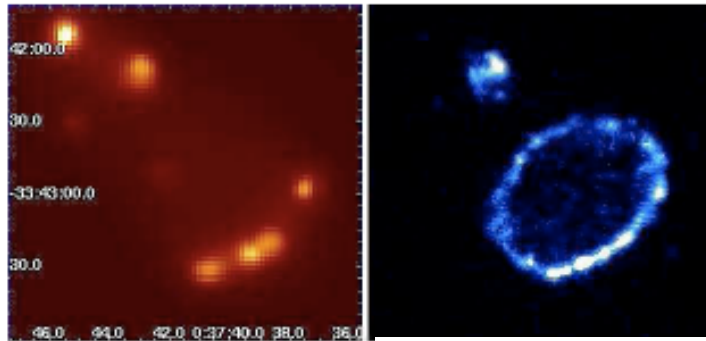
Interesting
below $\sim 10^{36}$
erg s⁻¹

Luminosity functions

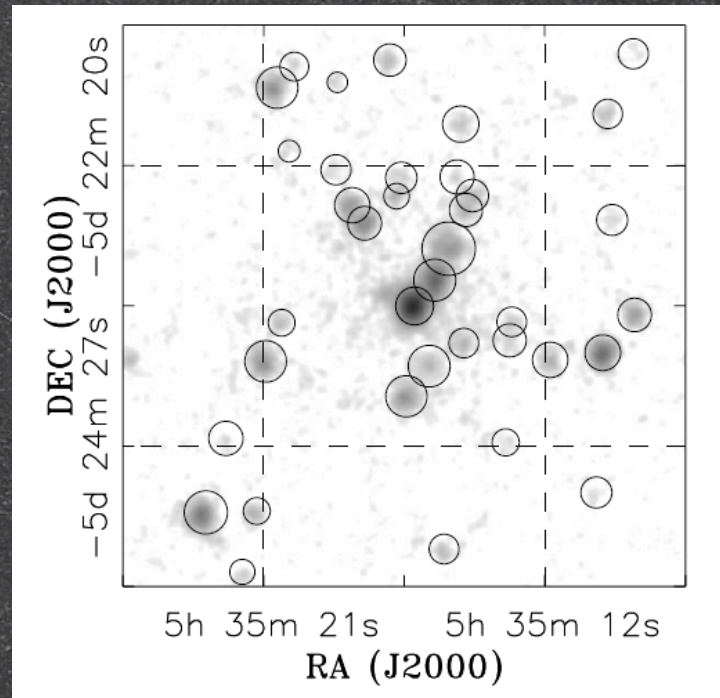


Other galaxies

Ultra-Luminous X-ray sources

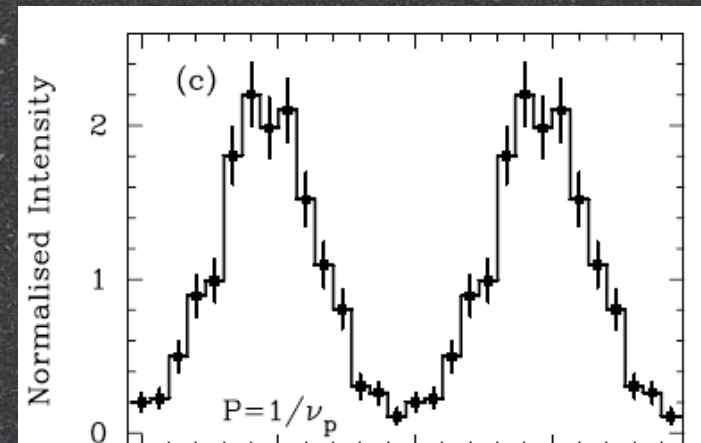


Rare objects



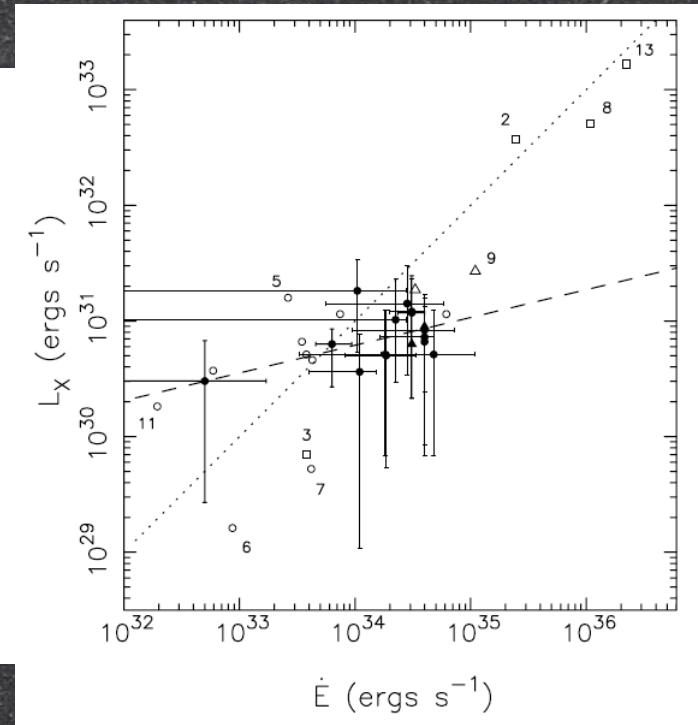
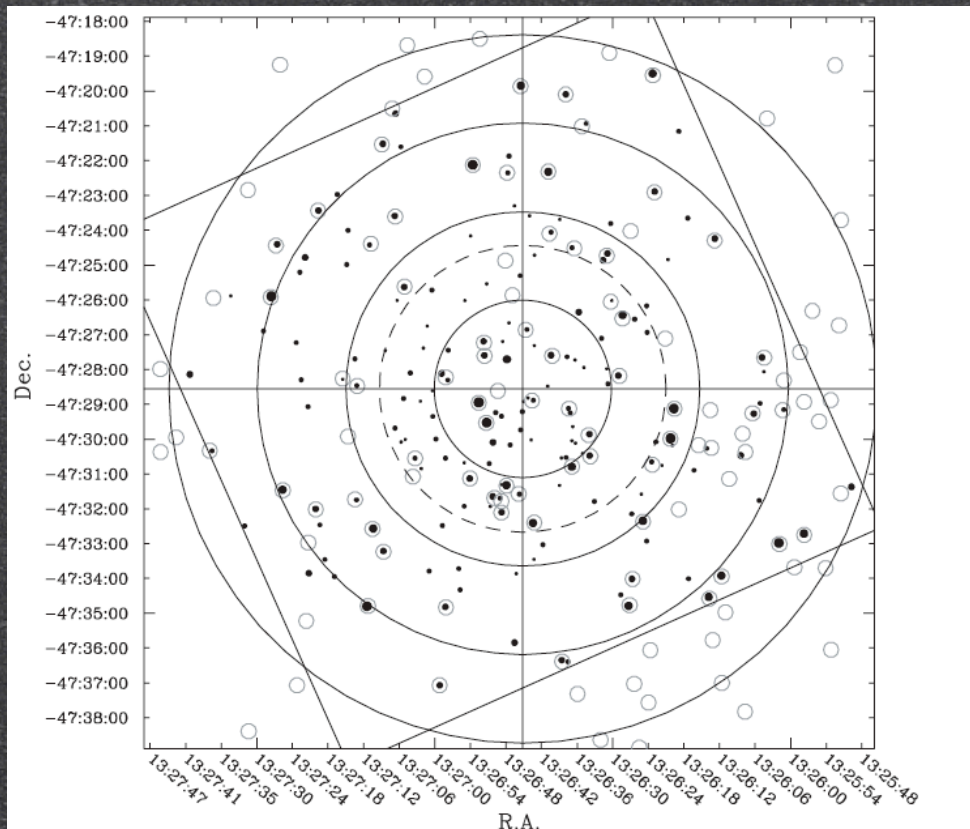
BMW-HRI survey

BMW J0806.3+1527



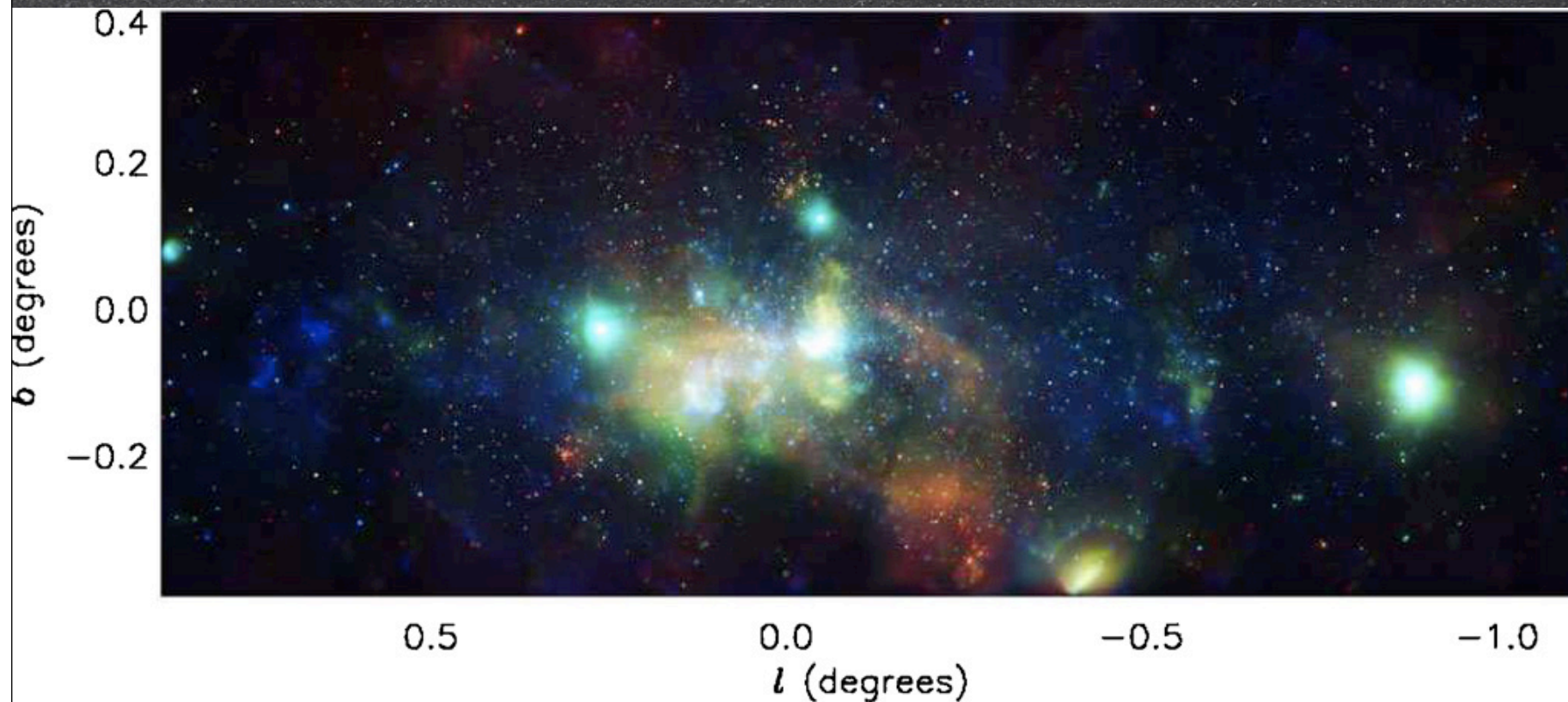
$P_{\text{orb}} = 321 \text{ s}$

NS in globular clusters



Omega Cen

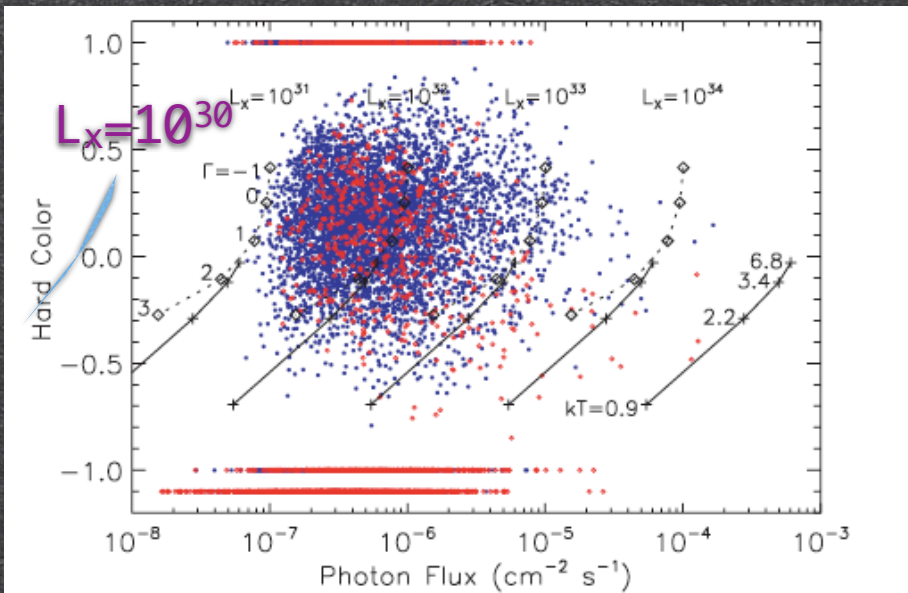
Galactic center



~2 deg x 0.8 deg

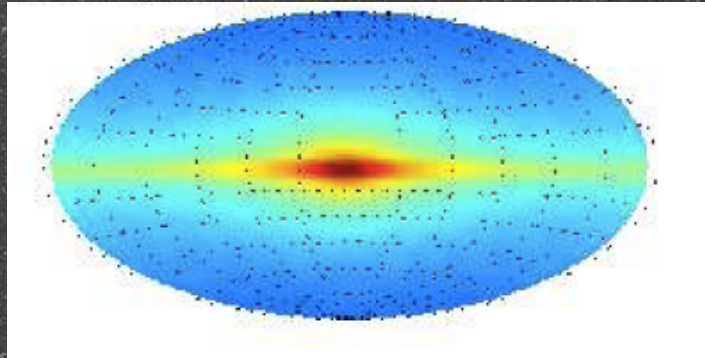
2 Ms

Galactic center



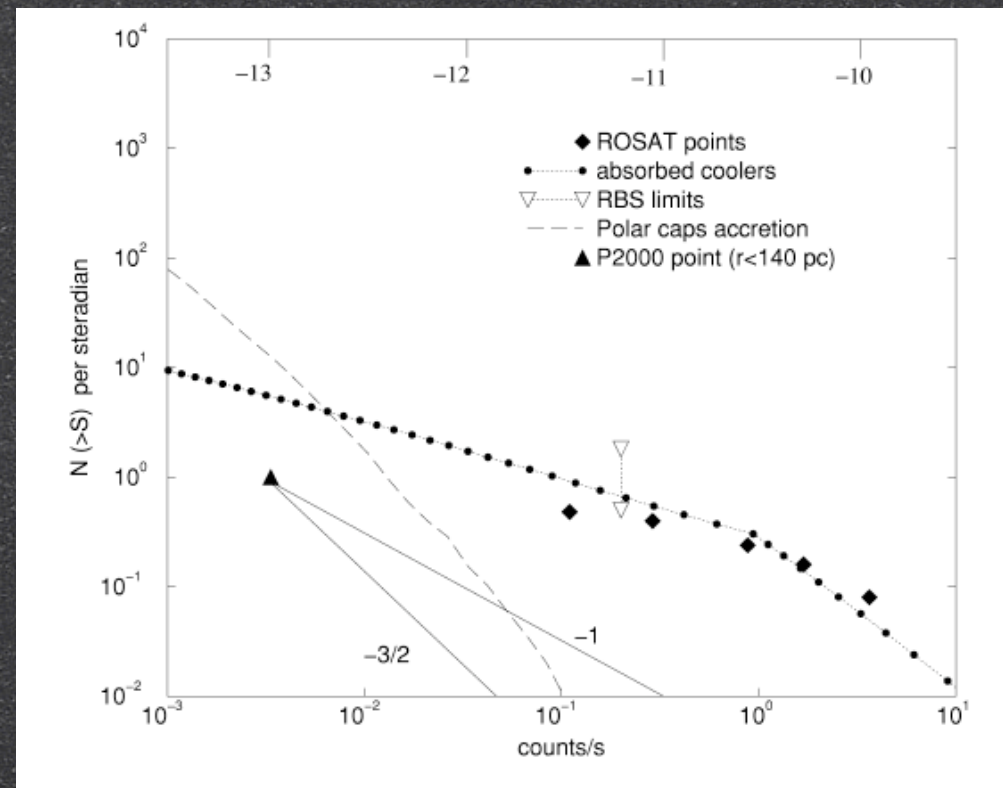
100 ks allows us
to detect sources
down to $L_x \sim 10^{30}$
 erg s^{-1}

Isolated neutron stars



$\sim 10^9$ NS in the galaxy

LogN-logS
(very soft spectrum)



Summary

Survey of the Galactic plane

Survey of the Galactic center region

Source population studies and rare objects

Observations of a few globular cluster

Neutron star Equation of state and
millisecond pulsars

High latitude survey

Old and isolated neutron stars

Other suggestions?