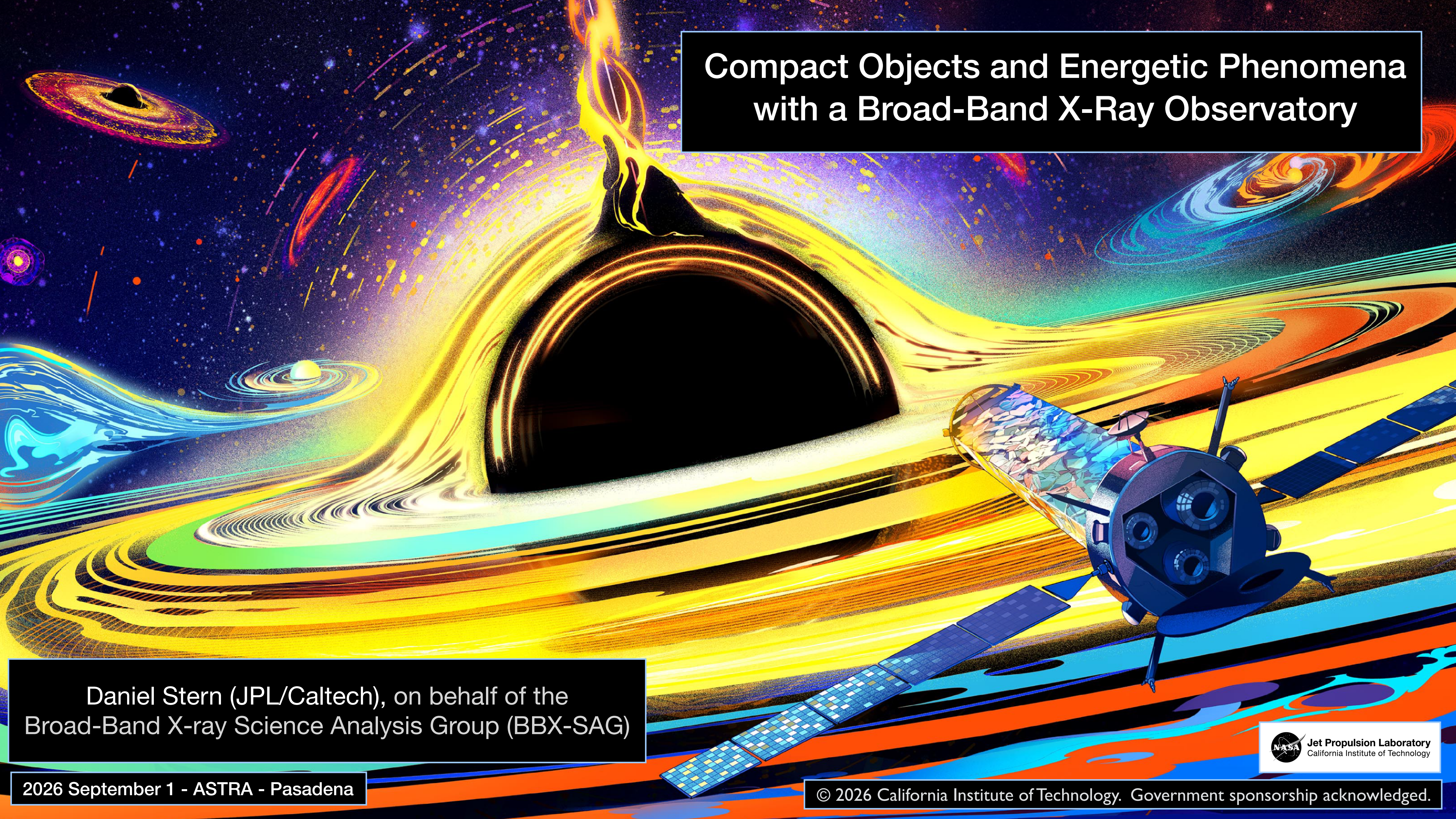
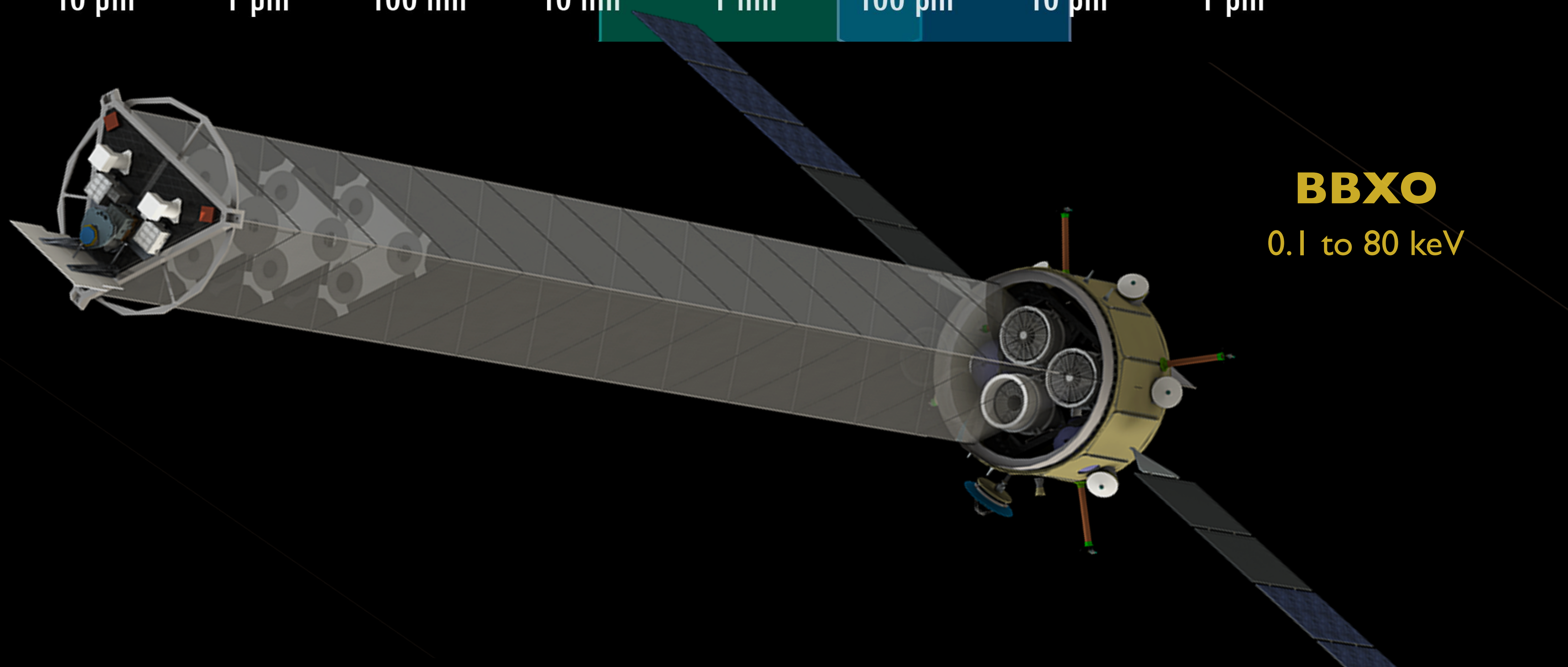
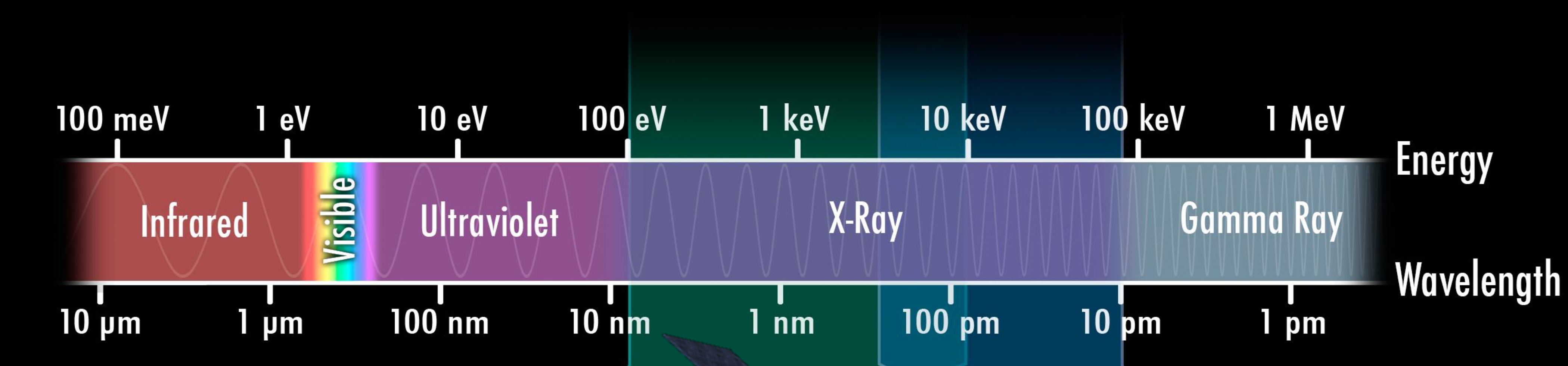


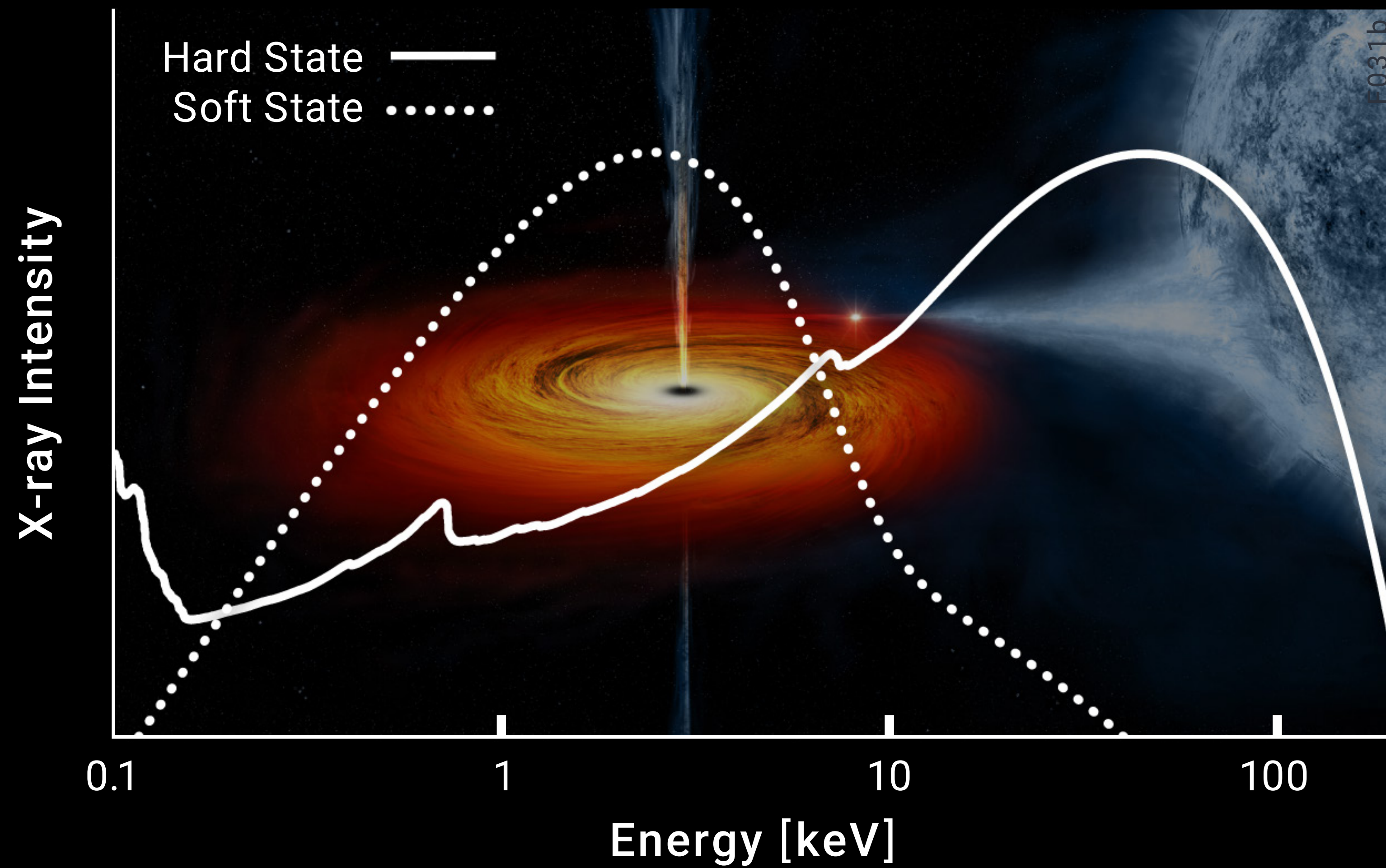
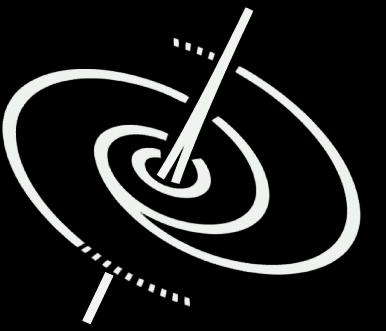


Compact Objects and Energetic Phenomena with a Broad-Band X-Ray Observatory

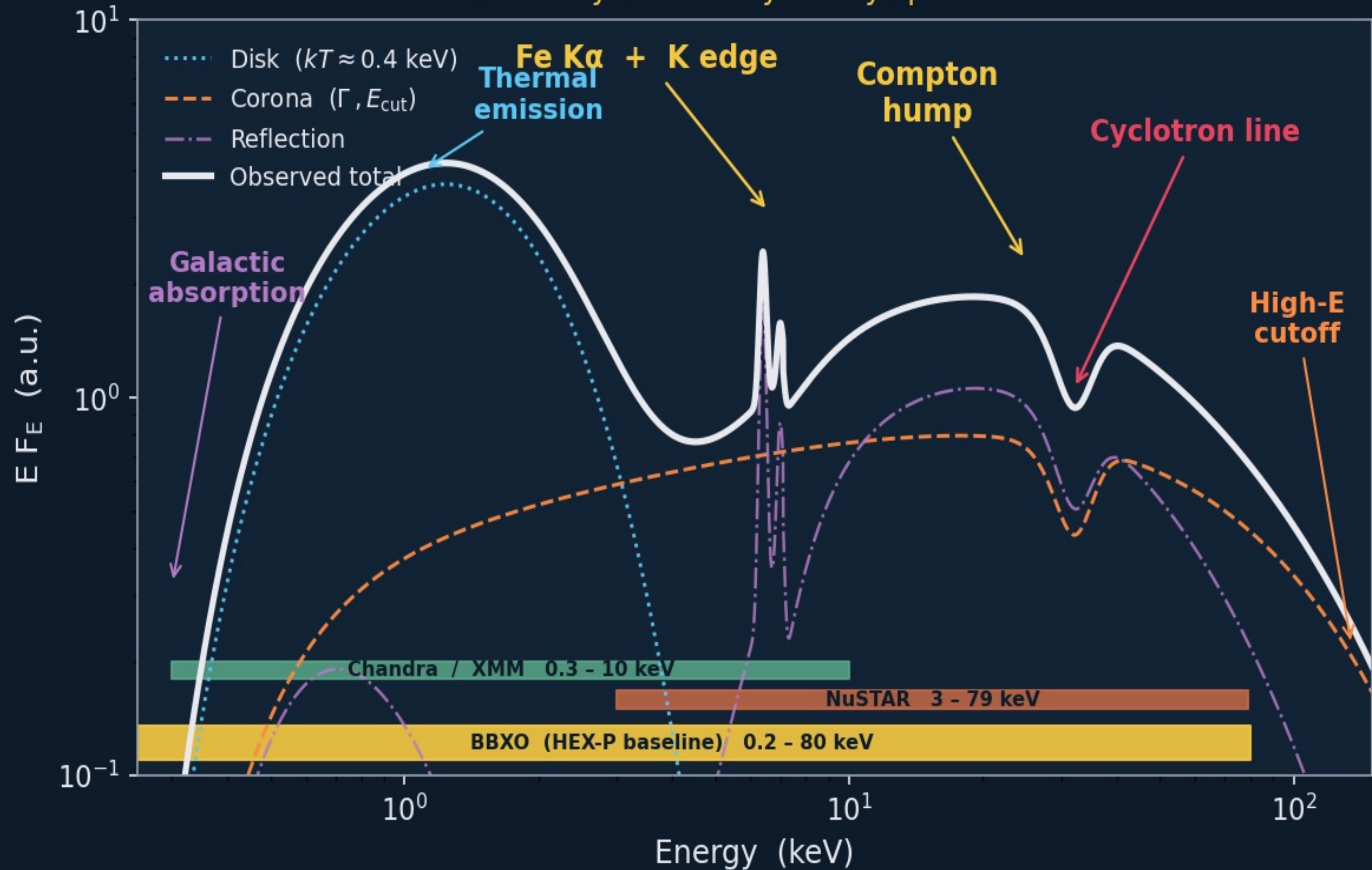
Daniel Stern (JPL/Caltech), on behalf of the
Broad-Band X-ray Science Analysis Group (BBX-SAG)



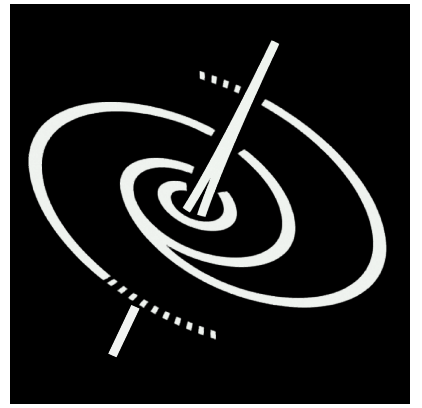
How do Binary Populations Live and Die?



Anatomy of an X-ray binary spectrum

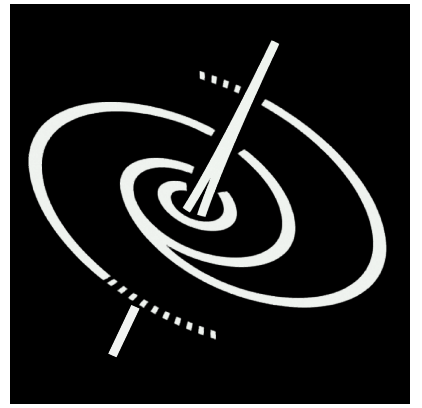


BBX Compact Objects & Energetic Events



- stellar-mass black hole accretion
 - accretion disk (e.g., inner radius, metallicity), corona (e.g., height, temperature), jet, spin, ...
 - neutron star equation of state
 - neutron star magnetic field strength
 - transient X-ray binaries
 - ultraluminous X-ray sources (ULXs)
 - Galactic Ridge demographics (e.g., accreting white dwarfs)
 - Galactic Center demographics
 - compact object demographics in nearby galaxies
-
- transient, explosive events (e.g., supernovae, FBOTs, GRBs, ...)
 - changing look quasars
 - Galactic particle accelerators

BBX Compact Objects & Energetic Events

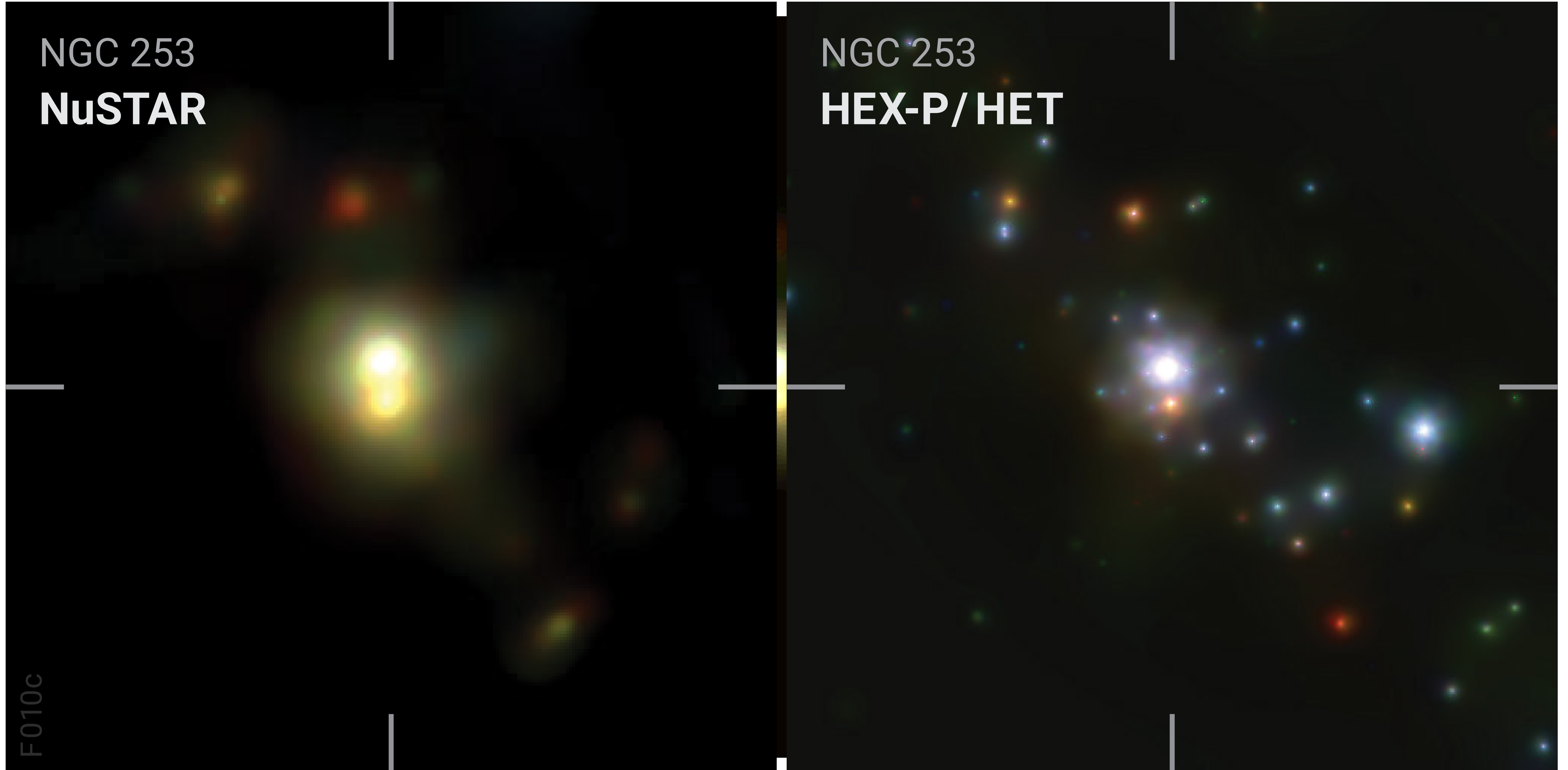


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-
- **transient, explosive events (e.g., supernovae, FBOTs, GRBs, ...)**
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 - **Galactic particle accelerators**

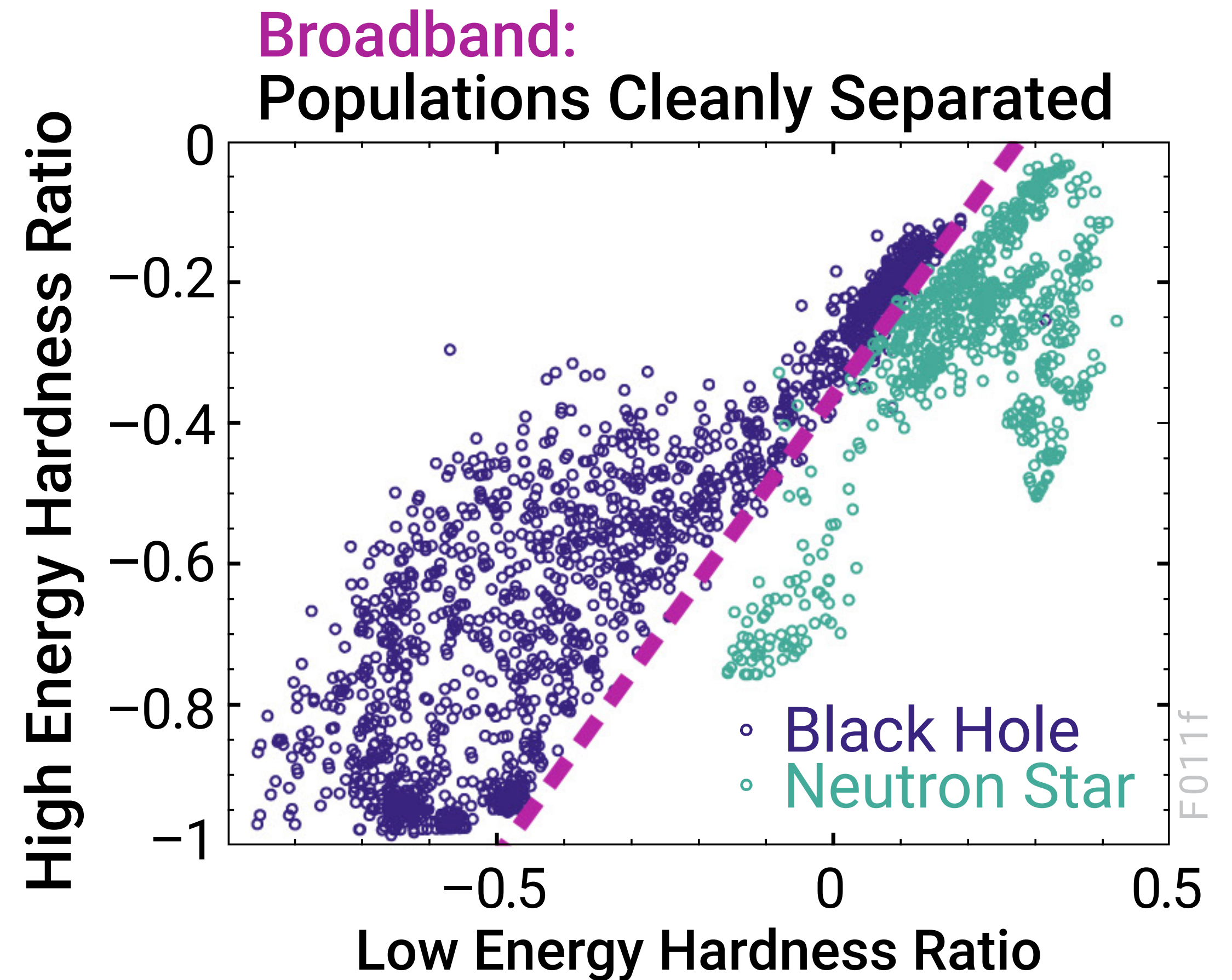
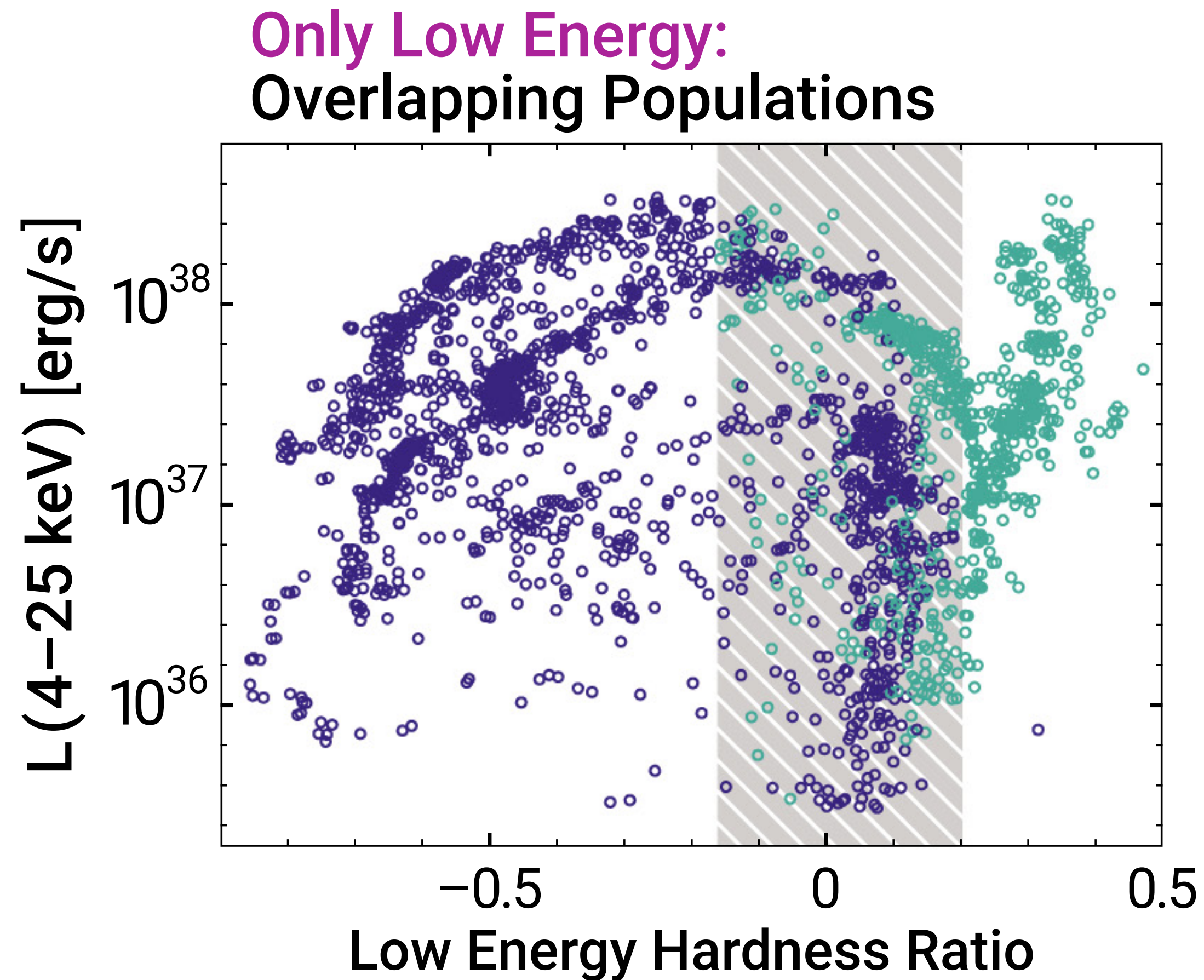
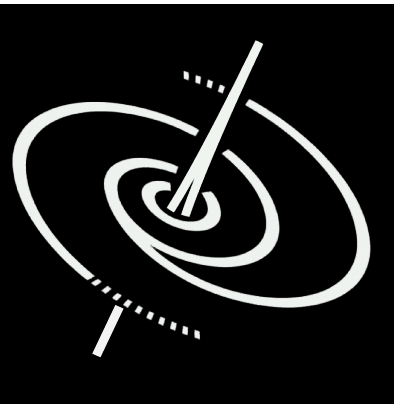
NGC 253
NuSTAR

F010c

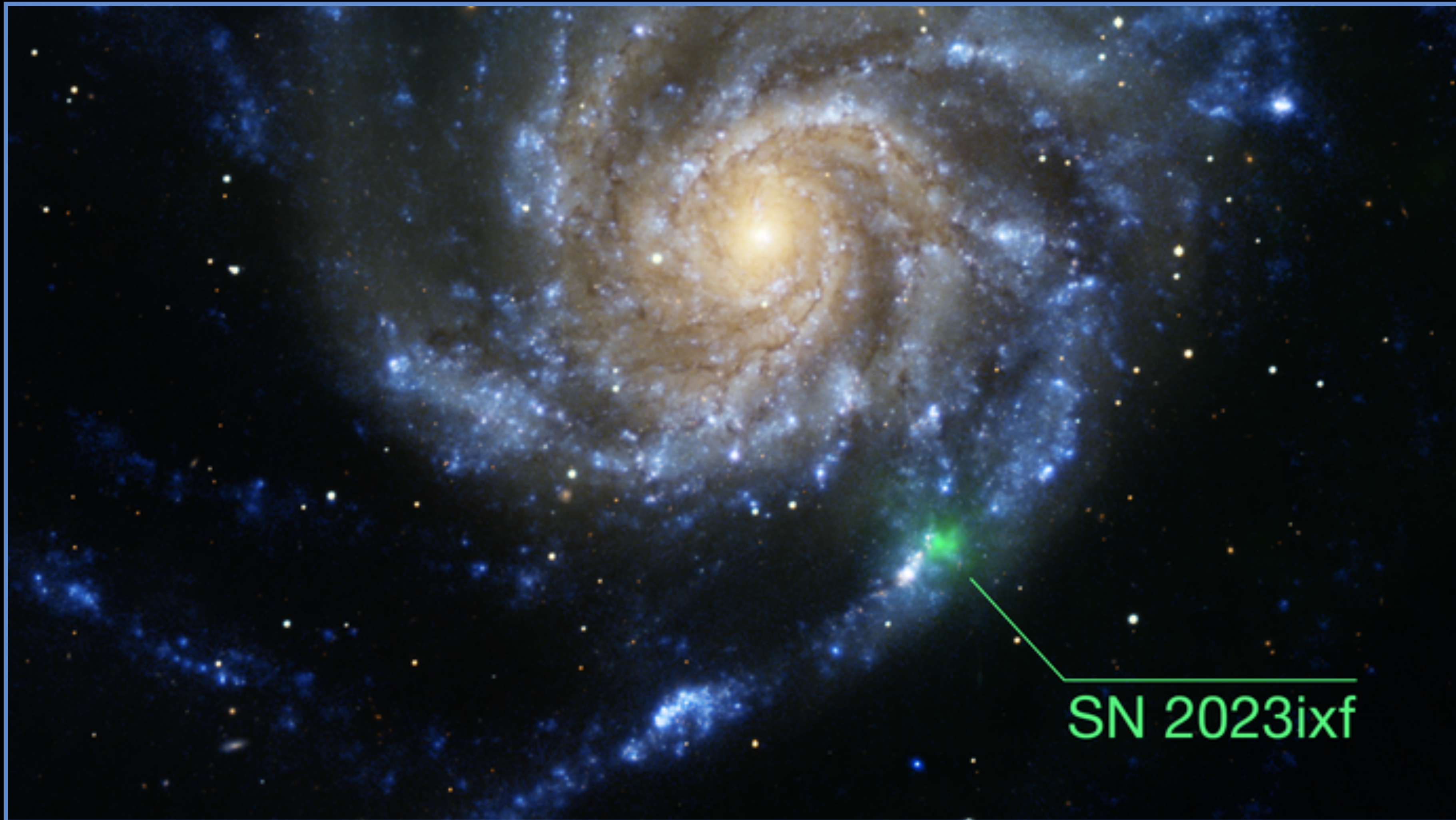
NGC 253
HEX-P/HET



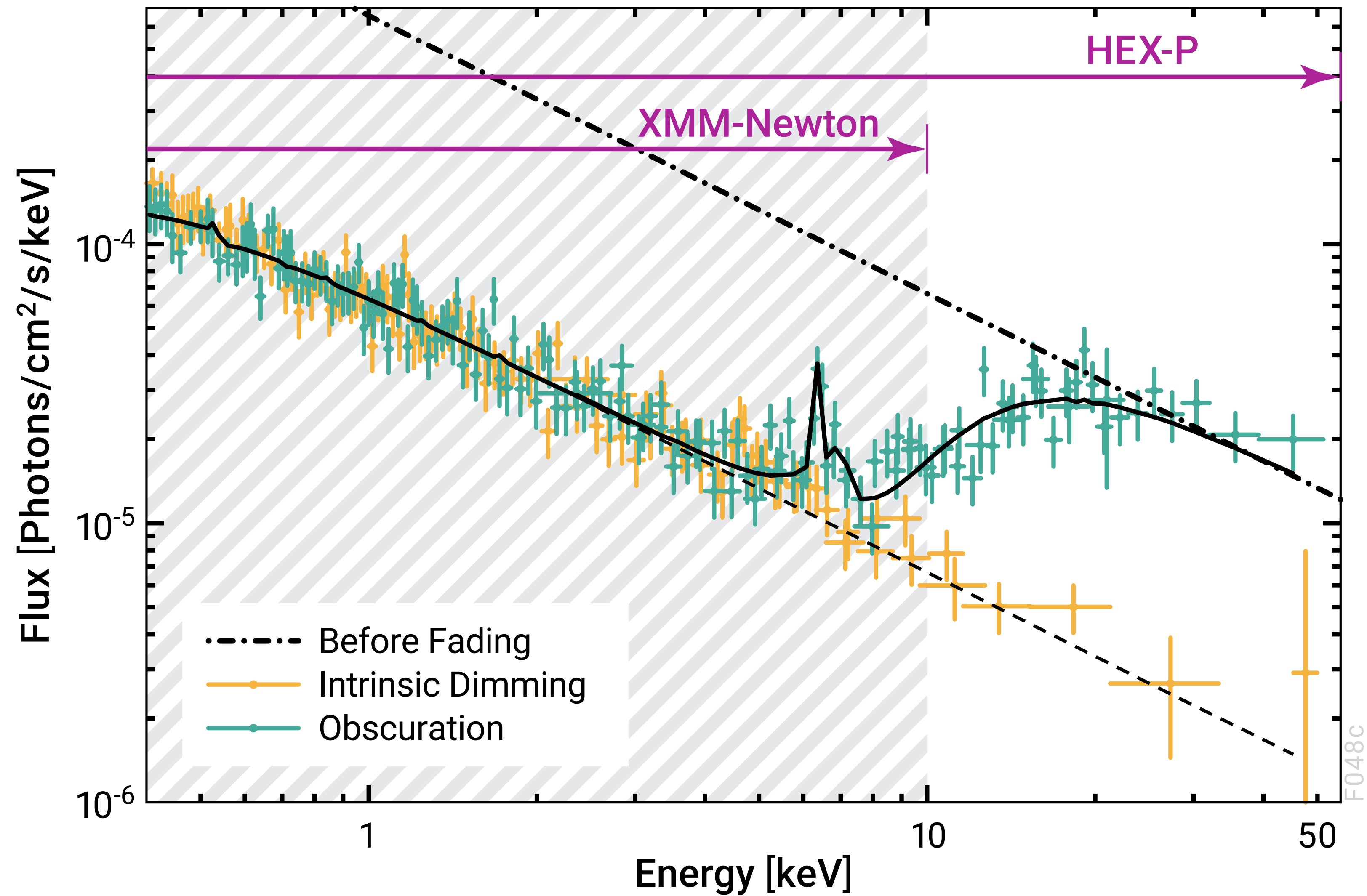
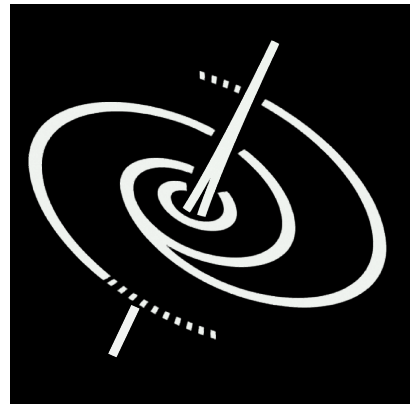
Separating Neutron Stars and Black Holes

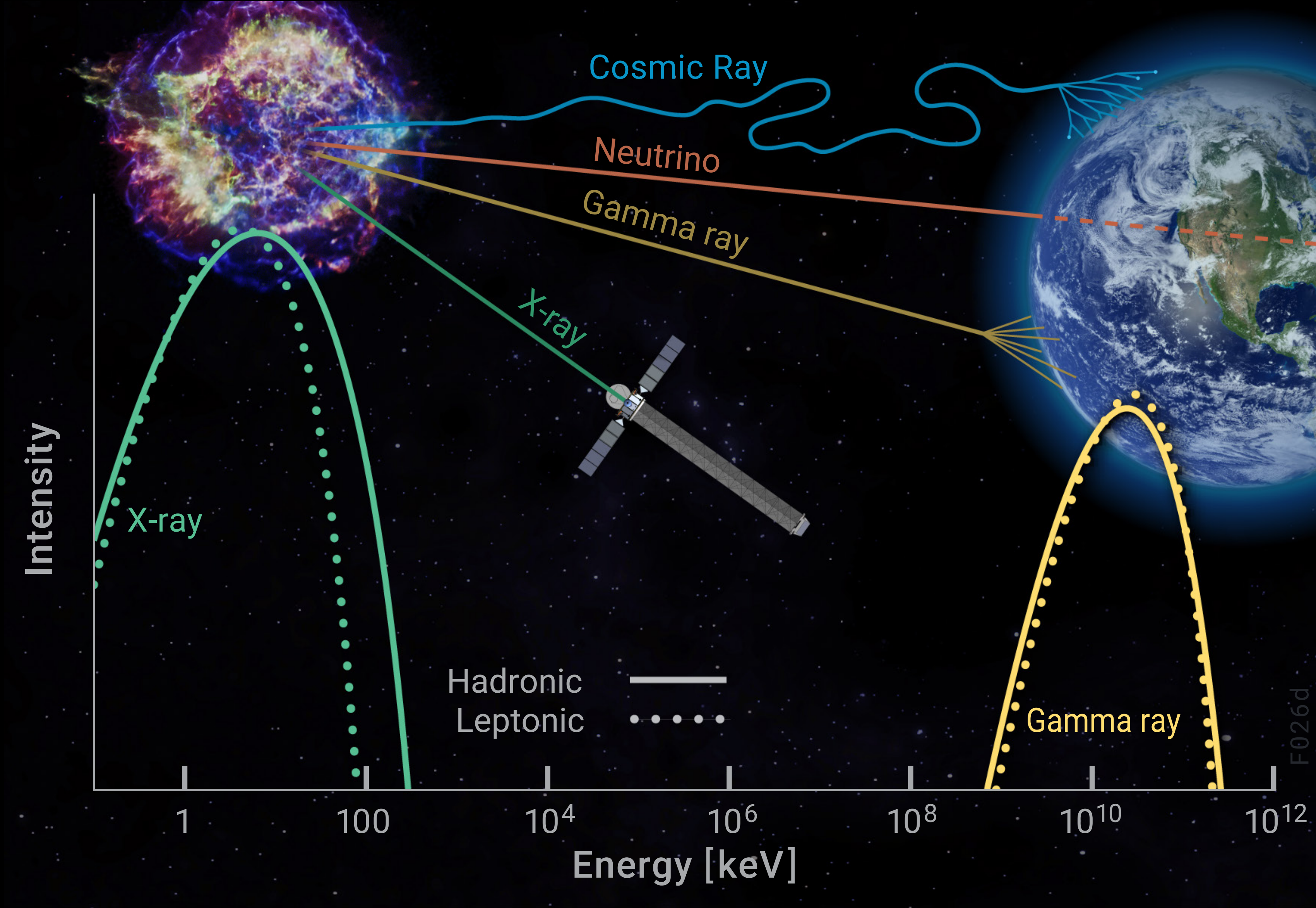


What Powers the Diversity of Explosive Phenomena Across Time and Multi-Messenger Domains?

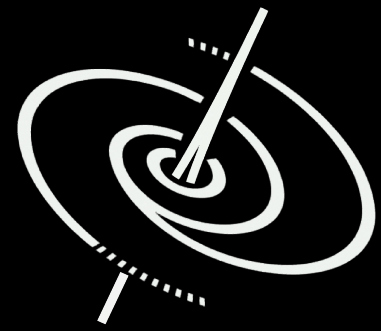


Changing Look AGN

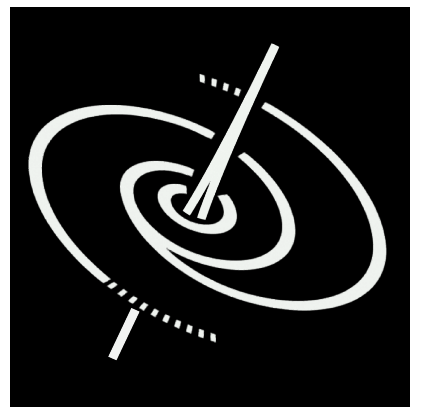




HEX-P will study the most energetic particle acceleration sites in the Galaxy, producing PeV cosmic rays, 100 TeV neutrinos, ultra-high energy gamma rays, and X-rays. Hard X-ray data (>10 keV) provide unique information to identify acceleration sites and constrain acceleration mechanisms.



Frontiers of Astronomy & Space Sciences



Lead Author	Topic
M. Brightman	Time Domain Astrophysics
J. Alford	Magnetars and Isolated Neutron Stars
R. Connors	X-ray Binaries
K. Mori	Milky Way Galaxy Surveys
K. Mori	Galactic PeVatrons
E. Kammoun	X-ray Corona
K. Madsen	Instrument Overview
J. Garcia	Science Overview
R. Ludlam	Neutron Stars
M. Bacchetti	Ultraluminous X-ray Sources
S. Reynolds	Supernova Remnants, Pulsar Wind Nebulae
R. Pfeifle	Dual AGN
P. Boorman	Obscured Active Galactic Nuclei
J. Piotrowska	Supermassive Black Hole Spin
F. Civano	Extragalactic Surveys
B. Lehmer	Nearby Galaxy Surveys
L. Marcotulli	Blazars



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