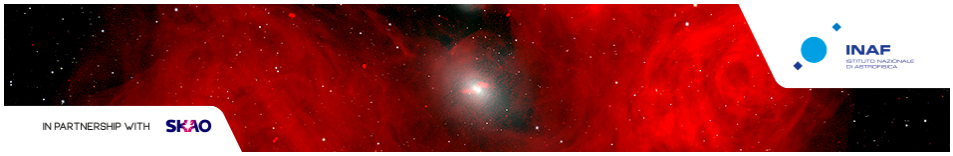

Contribution ID: **67** Type: **not specified**

How many transitional millisecond pulsars are out there?

Thursday, 30 November 2023 14:55 (25 minutes)

The discovery of transitional millisecond pulsars demonstrated that slight variations in the mass accretion rate can induce swings between a rotation-powered radio pulsar state and an accretion-powered X-ray pulsar regime. However, ten years after the first transitions seen, these pulsars turned out to be relatively rare. Transiently accreting millisecond pulsars are expected to turn on as rotation-powered systems as soon as they enter into quiescence. However, radio pulsations have been observed only once in spite of many efforts. On the other hand, transitional systems in a low-luminosity accretion regime showed a variable radio emission likely originated in more or less collimated outflows. Yet, transitions to the radio pulsar state have been sporadic. Recently, high-time resolution observations in the optical band widened the spectrum of searches for transitional systems. We will summarize the multi-wavelength efforts paid to catch these rare systems and discuss the role that can be played by the current and next generation of radio and X-ray facilities.

Reasearch area

Pulsars

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Session Classification: Parallel - Transients, Pulsars, GW