

The restless nature of AGN: 10 years later



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The search for variable AGN with Gaia

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The third release of Gaia data, published on June 13, 2022, includes not only astrometric and astrophysical parameters of different types of sources, but also several catalogues of variable sources. Among these, the catalogue of Gaia variable AGN, which is described by Carnerero et al. (2022). To identify the variable AGN, we analyzed the light curves of more than 80 million sources observed by Gaia, selecting 870 thousands of them compliant with requirements on their variability properties (structure function, Butler and Bloom metrics, fractional variability), color indices, astrometric parameters and others. The purpose was to create a variable AGN catalogue as pure as possible. More than 21,000 of these 870 thousand sources are identified as variable AGN for the first time. For each source of the catalogue, the Gaia multi-band light curves and the values of a number of variability parameters have been included in the database. In view of the next Gaia DR4, we are now implementing new variability parameters that will be published in the Gaia AGN variability table. They will be useful to the community, both for carrying out statistical studies and for AGN classification with machine learning.

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