



Publication Year	2018
Acceptance in OA@INAF	2020-11-18T15:44:52Z
Title	þ Erratum: X-Ray Properties of AGN in Brightest Clusters Study of the Chandra Archive in the $0.2 < z < 0.3$ and $0.55 < z < 0.75$ Redshift þ Range (2018, ApJ, 859, 65)
Authors	YANG, LILAN; TOZZI, Paolo; Yu, Heng; LUSSO, ELISABETA; GASPARI, MASSIMO; et al.
DOI	10.3847/1538-4357/aacea1
Handle	http://hdl.handle.net/20.500.12386/28425
Journal	THE ASTROPHYSICAL JOURNAL
Number	861



Erratum: “X-Ray Properties of AGN in Brightest Cluster Galaxies. I. A Systematic Study of the *Chandra* Archive in the $0.2 < z < 0.3$ and $0.55 < z < 0.75$ Redshift Range” (2018, *ApJ*, 859, 65)

Lilan Yang¹ , Paolo Tozzi^{2,1} , Heng Yu¹ , Elisabeta Lusso³ , Massimo Gaspari^{4,7} , Roberto Gilli⁵ , Emanuele Nardini² , and Guido Risaliti^{2,6}

¹ Department of Astronomy, Beijing Normal University, Beijing, 100875, People’s Republic of China; yang_lilan@mail.bnu.edu.cn, yuheng@bnu.edu.cn

² INAF—Osservatorio Astrofisico di Arcetri, Largo E. Fermi, I-50122 Firenze, Italy

³ Centre for Extragalactic Astronomy, Department of Physics, Durham University, South Road, Durham, DH1 3LE, UK

⁴ Department of Astrophysical Sciences, 4 Ivy Lane, Princeton University, Princeton, NJ 08544, USA

⁵ INAF—Osservatorio di Astrofisica e Scienza dello Spazio di Bologna, via Gobetti 93/3-40129 Bologna, Italy

⁶ Università di Firenze, Dip. di Fisica e Astronomia, via G. Sansone, I-50019 Sesto Fiorentino, Firenze, Italy

Received 2018 June 7; published 2018 July 16

There was an error in the published article. The abstract of the published article was incomplete due to an mistake. We present the full abstract here.

We present a search for nuclear X-ray emission in the brightest cluster galaxies (BCGs) of a sample of groups and clusters of galaxies extracted from the *Chandra* archive. The exquisite angular resolution of *Chandra* allows us to obtain robust photometry at the position of the BCG, and to firmly identify unresolved X-ray emission when present, thanks to an accurate characterization of the extended emission at the BCG position. We consider two redshift bins ($0.2 < z < 0.3$ and $0.55 < z < 0.75$) and analyze all the clusters observed by *Chandra* with exposure time larger than 20 ks. Our samples have 81 BCGs in 73 clusters and 51 BCGs in 49 clusters in the low- and high-redshift bin, respectively. X-ray emission in the soft (0.5–2 keV) or hard (2–7 keV) band is detected only in 14 and 9 BCGs ($\sim 18\%$ of the total samples), respectively. The X-ray photometry shows that at least half of the BCGs have a high hardness ratio, compatible with significant intrinsic absorption. This is confirmed by the spectral analysis with a power-law model plus intrinsic absorption. We compute the fraction of X-ray bright BCGs above a given hard X-ray luminosity, considering only sources with positive photometry in the hard band (12/5 sources in the low-/high- z sample). In the $0.2 < z < 0.3$ interval, the hard X-ray luminosity ranges from 10^{42} to 7×10^{43} erg s⁻¹, with most sources found below 10^{43} erg s⁻¹. In the $0.55 < z < 0.75$ range, we find a similar distribution of luminosities below $\sim 10^{44}$ erg s⁻¹, plus two very bright sources of a few 10^{45} erg s⁻¹ associated with two radio galaxies. We also find that X-ray luminous BCGs tend to be hosted by cool-core clusters, even though the majority of cool cores do not host nuclear X-ray emission. This work shows that our analysis, when extended to the entire *Chandra* archive, can provide a sizable number of sources, allowing us to probe the evolution of X-ray active galactic nuclei in BCGs as a function of the cosmic epochs.

ORCID iDs

Lilan Yang <https://orcid.org/0000-0002-8434-880X>
 Paolo Tozzi <https://orcid.org/0000-0003-3096-9966>
 Heng Yu <https://orcid.org/0000-0001-8051-1465>
 Elisabeta Lusso <https://orcid.org/0000-0003-0083-1157>

Massimo Gaspari <https://orcid.org/0000-0003-2754-9258>
 Roberto Gilli <https://orcid.org/0000-0001-8121-6177>
 Emanuele Nardini <https://orcid.org/0000-0001-9226-8992>
 Guido Risaliti <https://orcid.org/0000-0002-3556-977X>

⁷ Einstein and Spitzer Fellow.