(S. Kahler, personal communication and ref. 19). Still better correlation has been found between the higher energy (>20 keV) X-ray flux and the 3 GHz radio flux observed in impulsive solar-flare events[20].

Unfortunately, radio observations of UV Ceti flare stars have been almost entirely at radio frequencies about or below 400 MHz. We hope that higher frequency radio observations will be possible and will soon be available.

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CAROL JO CRANNELL*
JEFFREY E. MCCLINTOCK
Physics Department and Center for Space Research, Massachusetts Institute of Technology, Cambridge, Massachusetts, 02139

THOMAS J. MOFFETT
Department of Astronomy, University of Texas at Austin and McDonald Observatory, Austin, Texas, 78712

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*Present address: Laboratory for Solar Physics and Astrophysics, Spectroscopy Br., NASA-Goddard Space Flight Center, Maryland 20771.

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Positional agreement between 3U1706+32 and the cluster of galaxies A2241

UNIDENTIFIED X-ray sources at high galactic latitudes have been the subject of much discussion (see ref. 1 and refs therein). We call attention here to the existence of a rich Abell cluster of galaxies in the error box of the Uhuru high galactic latitude source 3U1706+32. The X-ray error box is rather large (9.8 square degrees), and the apparent intensity of the source is $R_x = 4.1 + 0.6$ counts s^{-1} in Uhuru counts[2]. The cluster, Abell 2241, is located at 16 h 57.8 min +32° 37′ (1950)[3]; it belongs to distance group 3 and has an estimated redshift, $z \approx 0.07$ (ref. 3). The cluster is of richness group 0 (ref. 3) and has been classified[4] as an irregular (I) cluster. The positional agreement between this cluster and 3U1706+32 was not reported in the survey of positional correlations between 3U X-ray sources and Abell clusters of galaxies of distance groups, $D \leqslant 3$, (ref. 5). The cluster A2241 should, therefore, be added as a possible identification to the list[5] of 21 clusters which have been tentatively identified with X-ray sources; no additional Abell cluster of distance group 3 or nearer lies within Uhuru[2] high galactic latitude error boxes.

Although A2241 is located within the error box of 3U1706+32 and is therefore a candidate for identification with the X-ray source, we stress that a much improved X-ray position is required before a certain identification can be made. The X-ray luminosity of the cluster, assuming it to be at a redshift of 0.07, is about 10^{45} erg s^{-1} (for $H_0 = 55$ km s^{-1} Mpc^{-1}). This luminosity is somewhat higher than the X-ray luminosity range ($\approx 10^{43}$ to $\approx 3 \times 10^{44}$ erg s^{-1}; see ref. 6) obtained for the other irregular clusters previously identified with X-ray sources, but is comparable with the luminosities of the brightest known regular X-ray clusters.

As is true for most of the other X-ray clusters, radio emission has also been observed from A2241; a double radio source, with a strength of 0.9 Jy at 1,445 MHz, is located in the projected area of the cluster[7]. An elliptical galaxy is located at the radio centroid[7]. It will be very interesting to learn whether or not the X-ray source is centered on this galaxy.

We consider that A2241 is a possible optical candidate for the high galactic latitude X-ray source 3U1706+32. A better measurement of position is however, required. It is also important to measure the cluster redshift so that, if the identification is correct, the X-ray luminosity can be calculated more accurately.

NETA A. BAHCALL
Princeton University Observatory, Princeton, New Jersey 08540

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Radio structure of the M87 jet

THE central region of M87 has a complex radio structure. There are at least three components[1,2], with diameters ≈0″.0013, ≈0″.01 and ≈0″.3, coincident with the optical nucleus of the galaxy and on either side there are two elongated components, ≈25″ in extent, the radio counterparts of the jet and counterjet[3,4]. When observed with a resolution of ≈5″, the structure of these outer components is similar and depends little on observing frequency, but at higher resolutions the jet component is seen to possess fine structure which the other lacks[5,6]. Here I report results of interferometer observations at 408 and 1,666 MHz, with resolving powers ≈0.5″ along the jet, which reveal the position and extent of this fine structure in more detail.

At 408 MHz the interferometer was formed from the Mk IA (76 m) telescope at Jodrell Bank and a 25-m parabaloid at RRE Defford (baseline 172,700λ). At 1,666 MHz the Mk II (38 m × 25 m) telescope and the Mk III (38 m × 25 m) telescope were