tion to sources within 5″. Using this spatial coincidence criterion, we identified a persistent 1283 MHz continuum source near FRB 20190714A, detected in both the 14 September 2019 and the 28 September 2019 epoch. The peak of the MeerKAT radio emission is offset by $\sim 2''.1$ from the peak of the i-band magnitude of the optical galaxy identified in the Panoramic Survey Telescope and Rapid Response System (PanSTARRS, located at Haleakala Observatory) image (shown as contours in Figures 2 and 3). The MeerKAT radio source is offset by 1.″68 from the localisation region of FRB 20190714 (cyan circle in Figures 2 and 3).

3.1.2 e-MERLIN detection of compact emission towards FRB 20190714

Compact persistent emission was detected in the 1.51 GHz e-MERLIN image at R.A. = $12^h15^m55^s.116$, Dec. = $-13°01'14.''48$ at 86 μJy beam^{-1} by e-MERLIN. The stochastic position uncertainty is (0.04, 0.15) arcsec and the uncertainty (due to the separation between phase-calibrator and target, and antenna position uncertainty) is (0.013, 0.056) arcsec, giving a total astrometric uncertainty of (0.04, 0.16) arcsec in R.A. and Dec., respectively. The offset from the FRB position is negligible in R.A. and 1.2 arcsec in Dec. The rms in this region (of full primary beam sensitivity) is 20 μJy beam^{-1}, making this a 4.3$\sigma_{\rm rms}$ detection. It is ~1.5$\sigma_{\rm rms}$ higher than that of the MeerKAT detection. Although the e-MERLIN flux scale nominal uncertainty is ~5%, in these data it is possibly higher due to the low declination of the phase-reference source and to the strong RFI which were removed from the data but may have affected the linearity of the receiver response. The peak of the e-MERLIN radio emission is offset by ~ 1.″4 from the peak of the PanSTARRS i-band emission in Figures 2 and 3. The e-MERLIN radio source (shown by the cyan cross in Figures 2 and 3) is offset by 0.″53 from the localised position of FRB 20190714.

We estimate the probability of a chance alignment of a background persistent radio source and the host galaxy, following the procedure of Eftekhari et al. (2018). Instead of using the FRB localisation region, we use the area of the galaxy, which is taken as $2'' \times 2''$, twice the half light radius from Heintz et al. (2020). Given the source has a flux density of ~ 90μJy we estimate the chance alignment probability of 0.0008, which corresponds to 3.4σ. The flux density threshold, assuming 3σ, for an unresolved radio source is ~ 15 μJy. If instead we consider the probability of detecting any radio source above our flux density threshold of 15μJy, the probability of a chance alignment is, therefore, approximately 0.8%, making the statistical significance of our detection 2.6σ. This represents the first detection of radio continuum emission associated with the host (galaxy) of FRB 20190714A (see Figure 2 and 3).

3.1.3 MeerKAT non-detections

No continuum emission was detected near FRBs 20171019A and 20190711A. As each of the images of these sources has an rms of ~ 5 μJy beam^{-1}, the 3σ intensity upper limit of any emission associated with FRBs 20171019A and 20190711A will be ~ 15 μJy beam^{-1} (see Table 1).

Candidate pulses above a signal-to-noise (S/N) of 10 from the single pulse search with MeerTRAP were visually inspected offline. No new FRBs or repeat bursts from the known FRBs were detected above a fluence threshold of 0.08 Jy ms assuming a 1 ms duration burst.

3.2 *Swift*

The UVOT summed image is presented in Figure 4. The UVOT field of view corresponds roughly to the uncertainty[7] of the localisation region of FRB 20171019A (RA = 7.5′and DEC = 7′). Using `uvotdetect`, we find 30 sources above the 5σ level and within the FRB 20171019A uncertainty region. Using a 3 arcsec maximum separation, which is slightly larger than the UVOT PSF (Breeveld et al. 2010), these sources are cross-matched with known catalogue sources. We find that out of the 30 sources detected by UVOT, 28 are spatially coincident with stars catalogued in the SDSS catalogue (DR12; Alam et al. 2015), and one source is coincident with a galaxy (AGN broadline SDSS ID: 1237652599570890948 at $z \sim 0.156$). This galaxy is also detected by the MeerKAT radio observations. We use the NASA/IPAC Extragalactic Database (NED)[8] to search for known galaxies in the FRB 20171019A uncertainty regions. We find multiple galaxies with unknown redshifts, therefore we cannot draw conclusions on the host galaxy from our observations. Using a 50″ circular ON region centred on the position of FRB 20171019A and a 50″ OFF region that does not contain any of the detected sources, we run the `uvotsource` tool with a 5σ background threshold and obtain a flux upper limit of 1.4×10^{-16} erg cm^{-2} s^{-1}Å^{-1} without applying a Calactic extinction correction.

The XRT summed image is shown in Figure 5. At the edge of the field-of-view, we detect a source spatially coincident with the Wolf 1561 star. As we consider this source unrelated to the FRB, we use the online Swift-XRT data products generator (Evans et al. 2007) (Evans et al. 2009) to derive upper limits in the 0.3-10 keV range on the count rate of 0.001885 counts.s^{-1}. Using `WebPIMMS`[9] (v4.11a) and assuming a weighted average $N_{\rm H} = 5.12 \times 10^{20}$ cm^{-2} from the direction of the source estimated from the NASA's HEASARC [10] online tools (HI4PI Collaboration et al. 2016) and a power law model with a photon index = 2, this upper limit translates to an energy flux of 6.6×10^{-14} erg cm^{-2} s^{-1} (8.3×10^{-14} erg cm^{-2} s^{-1} unabsorbed).

3.3 H.E.S.S.

No significant gamma-ray excess above the expected background is detected from the direction of FRB 20171019A, with 52 gamma candidate events from the source region and 524 background event. A second analysis using an independent event calibration and reconstruction (Parsons & Hinton 2014) confirms this result. A search for variable emission on timescales ranging from milliseconds to several minutes with tools provided in (Brun et al. 2020) does not reveal any variability above 2.2 σ. For the total data set of 1.8 h, 95% confidence level (C. L.) upper limits on the photon flux are derived using the method described by Rolke et al. (2005). The energy threshold of the data is highly dependent on the zenith angle of the observations. For these observations, the zenith angles range from 15 to 25 deg, which leads to an energy threshold for the stacked data set of $E_{\rm th}$ = 120 GeV. The upper limit on the Very High Energy (VHE)

[7] https://www.wis-tns.org/object/20171019a

[8] https://ned.ipac.caltech.edu; NED is funded by the National Aeronautics and Space Administration and operated by the California Institute of Technology

[9] https://heasarc.gsfc.nasa.gov/cgi-bin/Tools/w3pimms/w3pimms.pl

[10] https://heasarc.gsfc.nasa.gov/cgi-bin/Tools/w3nh/w3nh.pl