The Astrophysical Journal Letters, 875:L3 (32pp), 2019 April 10 https://doi.org/10.3847/2041-8213/ab0c57

First M87 Event Horizon Telescope Results. III. Data Processing and Calibration

The Event Horizon Telescope Collaboration
(See the end matter for the full list of authors.)

Received 2019 February 11; revised 2019 March 3; accepted 2019 March 3; published 2019 April 10

Abstract

We present the calibration and reduction of Event Horizon Telescope (EHT) 1.3 mm radio wavelength observations of the supermassive black hole candidate at the center of the radio galaxy M87 and the quasar 3C 279, taken during the 2017 April 5–11 observing campaign. These global very long baseline interferometric

W. Brisken for EHT-specific support with the use of DiFX. We acknowledge the significance that Maunakea, where the SMA and JCMT EHT stations are located, has for the indigenous Hawaiian people.

Facilities: EHT, ALMA, APEX, IRAM:30 m, JCMT, LMT, SMA, ARO:SMT, SPT.

Software: DiFX (Deller et al. 2011), CALC, PolConvert (Martí-Vidal et al. 2016), HOPS (Whitney et al. 2004), CASA (McMullin et al. 2007), AIPS (Greisen 2003), ParselTongue (Kettenis et al. 2006), GNU Parallel (Tange 2011), GILDAS, eht-imaging (Chael et al. 2016, 2018), Numpy (van der Walt et al. 2011), Scipy (Jones et al. 2001), Pandas (McKinney 2010), Astropy (The Astropy Collaboration et al. 2013, 2018), Jupyter (Kluyver et al. 2016), Matplotlib (Hunter 2007).

Appendix
Site and Data Issues

A.1. Issues Requiring Mitigation

The JCMT and SMA are located within hundreds of meters