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Assessing Phase Calibration Reliability of Continuum and Spectral Line Observations of a High-Mass Star Forming Region MD NAZMUS SAKIB, Western Illinois Univ, ESTEBAN ARAYA, Western Illinois University — Interferometry is a fundamental tool in astronomy because of imaging capabilities at high angular resolution. The data obtained from an interferometer has two components, amplitude and phase. Calibration of interferometric data is typically based on observations of a point-source (quasar) for which the expected amplitude and phase is known, and thus, the observations can be used to derive corrections to obtain the final deconvolved image of the astronomical source. Phase calibration errors can result in erroneous astrometry and imaging artifacts such as extended structures and spurious sources, particularly when self-calibration is performed. We assess the reliability of the phase calibration of radio continuum and spectral line (6 cm formaldehyde maser) observations of a high-mass star forming region obtained with the Very Large Array (VLA). We generated continuum images of right-hand and left-hand circular polarizations and different scans to check for consistency. In the case of the spectral line data, we find that the position of the maser in different frequency channels is within 0.082" in right ascension and 0.095" in declination, which is well within the VLA synthesized beam (0.53" x 0.41"), and we detect no trend in position offsets as a function of frequency. We find no evidence of significant phase calibration errors in the dataset that could compromise analysis of the images

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