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Mapping the filaments of NGC 1275 ARACELY COBOS, California State University East Bay; Observatories of the Carnegie Institution for Science, JEFFREY RICH, Observatories of the Carnegie Institution for Science, GREAT OBSERVATORIES ALL-SKY LIRG SURVEY (GOALS) COLLABORATION —
The giant elliptical brightest cluster galaxies (BCGs) at the centers of many massive clusters are often surrounded by drawn-out forms of gaseous material. It is believed that this gaseous material is gas condensing from the intracluster medium (ICM) in a "cooling flow," and it can directly impact the growth of the BCG. The galaxy NGC 1275 is one of the closest giant elliptical BCGs and lies at the center of the Perseus cluster. NGC 1275 has large filaments that are thought to be associated with a cooling flow, but they may also be affected by its AGN. To investigate the relationship between the AGN and the cooling flow we have mapped the filaments around NGC 1275 with the Cosmic Web Imager, an image-slicing integral field spectrograph at Palomar Observatories. We employ standard emission-line ratio diagnostics to determine the source of ionizing radiation. We use our analysis to investigate whether the formation of the extended filaments is a result of gas from the ICM collapsing onto the galaxy as it cools or if it is possible that the filaments are a result of the cluster's interaction with the outflow driven by the AGN.

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