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The LIGO HET Response (LIGHETR) Project to Discover and Spectroscopically Follow Optical Transients Associated with Neutron Star Mergers MARIA JOSE BUSTAMANTE ROSELL, J. CRAIG WHEELER[1], KARL GEBHARDT, AARON ZIMMERMAN, RICHARD MATZNER, GREG ZEIMANN, MATTHEW SHETRONE, STEVEN JANOWIECKI, PAWAN KUMAR, Univ of Texas at Austin, DAVID POOLEY, Trinity Univ, BENJAMIN P. THOMAS, Univ of Texas at Austin, CHAD HANNA, DAVID RADICE, Penn State Univ, LIFAN WANG, SIJIE CHEN, Texas A&M Univ, JOZSEF VINKÓ, Univ of Texas at Austin, DAVID SAND, Univ of Arizona, CHRIS FRYER, Los Alamos Natl Lab, OLEG KOROBKIN, RYAN WOLLAEGER, Los Alamos Nal Lab, FREDERIC V. HESSMAN, Institut für Astrophysik, University of Göttingen, Germany, KRISTEN B. MCQUINN, Univ of Texas at Austin, THE LIGO HET RESPONSE (LIGHETR) TEAM — The LIGO HET Response (LIGHETR) project is a group of several institutions performing spectroscopic followup of gravitational wave sources discovered by the LIGO/Virgo collaboration (LVC). LIGHETR uses two integrated field unit spectrographs (IFUs) with deep coverage in the blue, VIRUS and LRS2, both mounted on the 11 m Hobby Ebberly Telescope (HET). Our strategy is to target the most probable galaxies within the LVC sky-map, with the aim to acquire the earliest, rapidly varying, blue *spectra* of the electromagnetic counterparts. Alternatively, we also perform follow-up on transient candidates identified by other observatories. The unique challenges of the observations (fixed zenith angle, IFUs) necessitate custom pipelines for rapid observation planning and data reductions using novel techniques which will be presented here.

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