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The LIGO HET Response (LIGHETR) Project to Discover and Spectroscopically Follow Optical Transients Associated with Neutron Star Mergers MARA JOS BUSTAMANTE ROSELL, CRAIG WHEELER, KARL GEBHARDT, AARON ZIMMERMAN, RICHARD MATZNER, GREG ZEIMANN, University of Texas at Austin, MATTHEW SHETRONE, University of California Observatories , STEVEN JANOWIECKI, McDonald Observatory West Texas, PAWAN KUMAR, University of Texas at Austin, DAVID POOLEY, Trinity University, BENJAMIN P. THOMAS, University of Texas at Austin, CHAD HANNA, DAVID RADICE, The Pennsylvania State University, LIFAN WANG, SIJIE CHEN, Texas AM University, JOZSEF VINK, Konkoly Observatory, DAVID SAND, The University of Arizona, CHRIS FRYER, OLEG KOROBKIN, RYAN WOLLAEGER, Los Alamos National Lab, FREDERIC V. HESSMAN, Georg-August-Universitt Gttingen, KRISTEN B. MCQUINN, Rutgers University — 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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