Ubiquitous Fast Propagating Intensity Disturbances in Solar Chromosphere
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High cadence observations by a slit-jaw (SJ) optics of a sounding rocket experiment named Chromospheric Lyman Alpha SpectroPolarimeter (CLASP) reveal that intensity disturbances recurrently propagate along the bright elongated structures in the chromosphere or transition region at a speed much higher than a sound speed. The CLASP/SJ instrument provides us a time series of 2D images with Ly-alpha broadband filters at a 0.6 s cadence. The fast propagating intensity disturbances are observed in the quiet Sun and an active region, and at least 20 events are clearly detected in the field of view of 527′′x527′′ during just 5-minute observation. The apparent speed of the intensity disturbances is from 150 to 350 km/s, and it is comparable to the local Alfvén speed in the transition region. The intensity disturbances tend to propagate away from areas with strong photospheric magnetic fields. The fast propagating intensity disturbances may be related magnetic canopy structures. The travel distance of the intensity disturbances is about 5′′-10′′, and the width is a few arcseconds that is almost determined by the pixel size of 1′′.03. The intensity fluctuations propagating at about the Alfvén speed suggest a magnetohydrodynamic fast mode waves. One issue on the possibility of the fast mode wave is that the intensity disturbances do not propagate uniformly toward all the directions, but a part of the wave may be only detected because bright and long structures are needed to catch the faint intensity fluctuations propagating at very high speed.