turned on. The deflector intervals are denoted by dark blue in the top bar of the 3rd panel. The main species in the solar wind are protons (H+) and alpha particles (He++). In the spectrogram (top panel), the peak with the highest count rate is the solar wind proton (H+) peak, and the alpha particle peak (He++) has energy per charge twice that of the proton peak. Therefore, the 2nd brightest peak in yellow and green is the alpha particle (He++) peak. The blue band above alphas is the interstellar proton pickup ions. The cutoff for these ions occurs at 4 time the energy per charge of the proton peak.

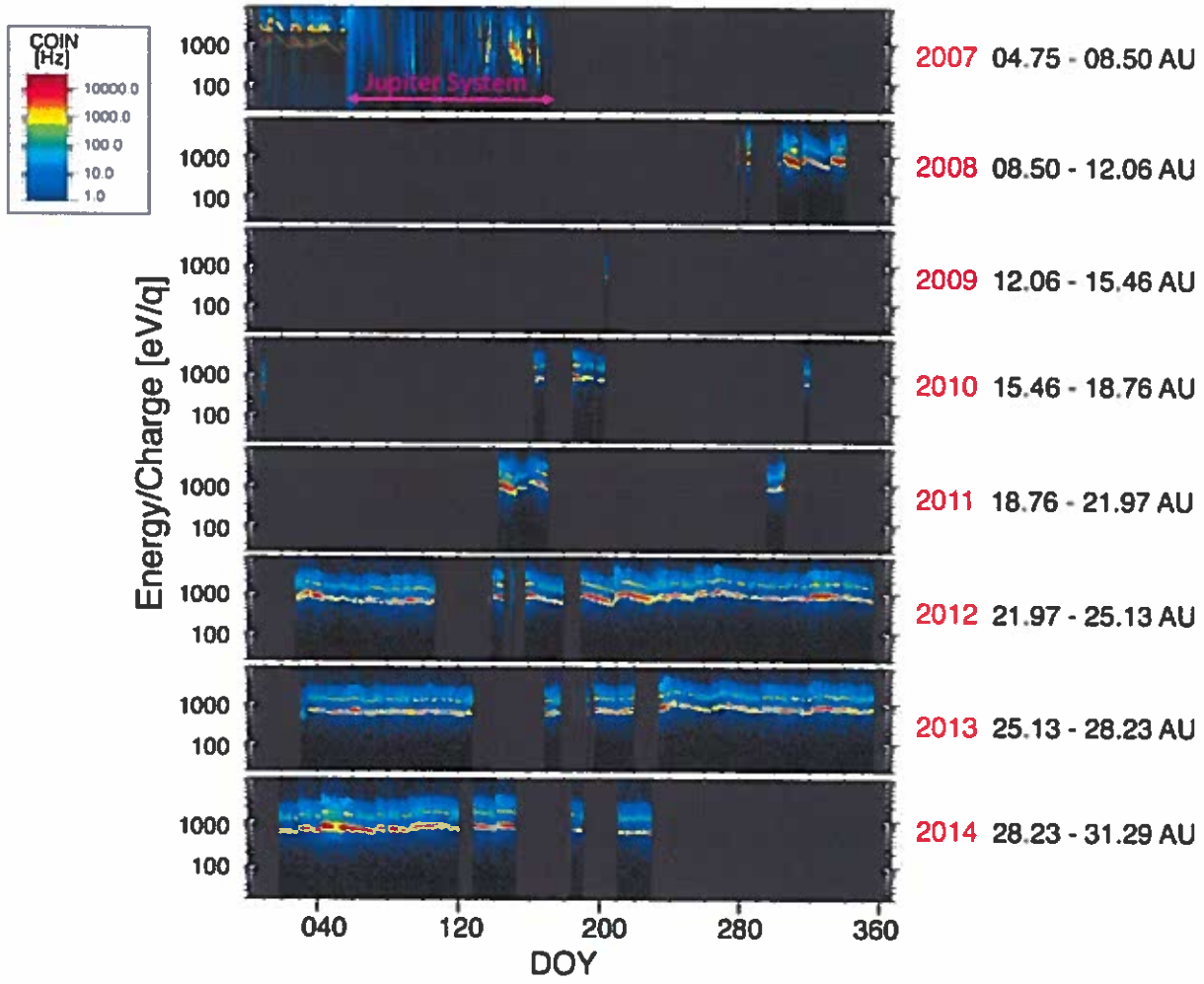

Figure 14-13: Yearly coincidence spectrograms for each year of SWAP science operations. On the right we indicate the year and range of distances for each year.

To help users know when SWAP was collecting observations, in Figure 14-13 we show an overview of all the SWAP science measurements for the entire New Horizons mission to date. Note that starting in 2012 the coverage increases since we began taking measurements during hibernation. In the heliospheric measurements there are times when the solar wind is outside the SWAP FOV. Since the solar wind is quite radial, the Sun location can be used to find the approximate solar wind direction. The Sun direction is