



**Fig. 6.** Flare intensity distribution in the IRIS Mg II wavelength band at the flare time (02:04:28 UT). Panel (a) shows the full spectra of the Mg II band between  $\lambda = 2784 \text{ \AA}$  and  $\lambda = 2835 \text{ \AA}$  (50  $\text{\AA}$ ) at the position of slit 1. Two dashed horizontal black lines indicate the coordinates  $y = 70$  and  $y = 80$  at the location of the maximum of the Balmer continuum in the spectral image. Panel (b) presents the spectral profile in the full range of the IRIS Mg II wavelength band at the two positions ( $y = 70$  and  $80$  pixels). Panels (c) and (d) show the zoom of two spectral profiles of panel (b) at ( $y = 70, 80$ ) located at the two extremities of the wavelength band (dw1, dw2) indicated by two vertical cyan lines and two cyan arrows at the top of panel (a) right and left in the panel. Panels (e) and (f) show similar zoom spectra in the two continuum regions at the preflare time (01:43:41). Panels (g) and (h) show the difference in intensity ( $\Delta(\text{Intensity})$ ) between the intensity at the flare time (02:04:28 UT) and at the preflare time (01:43:41 UT). The intensity is calibrated to the c.g.s. units, i.e.,  $\text{erg s}^{-1} \text{sr}^{-1} \text{cm}^{-2} \text{\AA}^{-1}$ .

$\text{cm s}^{-1}$ .  $n$  is the number of photons per DN, it is 4 for FUV and 18 for NUV spectra.  $I_o$  is the observed intensity in  $\text{DN s}^{-1}$  and  $A_{\text{eff}}$  is the effective area in  $\text{cm}^{-2}$  and obtained through *iris\_get\_response* routine available in SolarSoftWare (SSW). The dispersion  $d$  is taken in  $\text{\AA pixel}^{-1}$ . The solid angle  $\omega$  is calculated as  $\omega = 0.3327 \times 720 \times 0.33 \times 720 / (1.5 \times 10^8)^2$ .

Figure 5 shows the relation between the DN signal in the range of Mg II k line and the calibrated data for the quiet Sun ( $y = 180$  pixel). The Mg II k line peaks at  $4.8 \times 10^5 \text{ erg s}^{-1} \text{sr}^{-1} \text{cm}^{-2} \text{\AA}^{-1}$ . At either end of the domain, the photospheric Mg II wing emission increases.