

<b>ENGINEERING CHANGE ORDER</b>			<b>ECO No.</b> <u>COS-060</u>	
Center for Astrophysics & Space Astronomy University of Colorado, Boulder			Date <u>April 2, 2001</u>	
			Sheet <u>1</u> of <u>2</u>	
Drawing/Document Title	Drwg/Doc No.	Revision Letter		Special Distribution
		Current	New	
COS Calibration	COS-01-0003	-	A	
Requirements & Procedures				Stop Production Now
Document				<input type="checkbox"/> Yes
				<input type="checkbox"/> No

**Description of Change:**

- Page 8, section 2.3.1.1, last sentence: replace the words “charge depletion” with “gain degradation”.
- Page 18, figure 4.1-4: Add an \* at the end of the text “Subtract inplane grating & OTA scatter”.
- Page 28, section 4.4.1, 3<sup>rd</sup> sentence from the bottom: Insert the text, “in the dispersion direction.” after the 200µm.
- Page 39, section 4.9.1, after equation 4.9-2: In the line where p is defined add the word “average”. The new description should thus read, “p is the average plate scale in ...”
- Page 46, section 4.12.1, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sentence: Change the word “photons” to “events”.
- Page 47, section 4.12.3. Replace equation 4.12-3 with the following...
$$\sigma_{E_{ij}} = \langle \epsilon_{ij} \rangle \sqrt{C_{ij}}$$
- Page 47, section 4.13.1, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: Insert “in the spatial dimension” after the words “...FUV spectrum...”.
- Page 49, figure 4.13-2: Change figure number of the 2<sup>nd</sup> figure from 4.13-1 to 4.13-2.
- Page 49, figure 4.13-2: Add “(t)” to the  $\epsilon_{ij}$ .
- Page 49, equation 4.13-4: Replace equation 4.13-4 with the following...

<b>Reason for Change:</b> General updates to correct typos and fix small problems	Disposition/Effectivity				
	To Comply With ECO				
	Use As Is				
	Rework To ECO				
	Scrap And Rebuild				
	Record change Only				
	Other (See Above)				
Prepared By: Erik Wilkinson	Date	4/2/01	CCB Required	<input type="checkbox"/> Approved	
Approved By: _____	Date	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NotApproved	
Approved By: _____	Date	_____	<input type="checkbox"/> Class I <input type="checkbox"/> Class II	Immediate	
Approved By: _____	Date	_____		Incorporation	
Approved By: _____	Date	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Approved By: _____	Date	_____	Completion		
Project Mgr: _____	Date	_____	Date		

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$$\langle \varepsilon_{ij} \rangle = \frac{E_{ij}}{C_{ij}}$$

11. Page 50, equation 4.13-7: Replace equation 4.13-7 with the following to correct for variations in the background extraction region...

$$\sigma_{N_i} = \frac{1}{t_{\text{exp}}} \sqrt{\left( N_i t_{\text{exp}} \frac{1}{N_j \cdot \text{SNR}_{ff_{ij}}} \right)^2 + \varepsilon_i^2 t_{\text{exp}} \left( GC_i + \left( \frac{\Delta n}{\Delta w \Delta n_2} \right) BK_i \right)}$$

12. Page 86, equation 7.2-5: Replace equation 7.2-5 to correct for difference in the areas used to compute the background and the spectral bin.

$$\sigma_{b_i} = \sqrt{\frac{\Delta n}{\Delta w \Delta n_2} b k_i}$$

13. Page 86, equation 7.2-6: Replace equation 7.2-6 to correct for difference in the areas used to compute the background and the spectral bin.

$$\sigma_{n_i}^2 = \left( n_i \frac{\sigma_{\varepsilon_i}}{\varepsilon_i} \right)^2 + \varepsilon_i^2 \left( g c_i + \frac{\Delta n}{\Delta w \Delta n_2} b k_i \right)$$

14. Page 86, 2<sup>nd</sup> to last sentence on the page: Add “at pixel i,j” to the end of the sentence. Thus it should read “Where  $c_{ij}$  is the number of counts in the flat field image at pixel i,j.”

15. Page 88, equation 7.2-16: Replace equation 7.2-16 to correct for difference in the areas used to compute the background and the spectral bin.

$$\sigma_{N_i} = \frac{1}{t_{\text{exp}}} \sqrt{\left( N_i t_{\text{exp}} \frac{1}{N_j \cdot \text{SNR}_{ff_{ij}}} \right)^2 + \varepsilon_i^2 t_{\text{exp}} \left( GC_i + \left( \frac{\Delta n}{\Delta w \Delta n_2} \right) BK_i \right)}$$