Modal analyses: Mineral modes of both lithologies are listed in Table 2. Maskelynite and augite increase in modal abundance from A to B, while pigeonite decreases (Figure 1), consistent with [2].

The averaged augite abundances (Fig. 1) for lithology B and whitlockite abundances of all the analyzed sections differ from those found in [2]. This may be due to the difference in modal analysis techniques. McSween and Jarosewich [2] used the optical point counting technique. Modes in our study were acquired using an Energy Dispersive Spectrometer coupled with an Electron Microprobe, the Feature Scan software developed by Oxford Instruments, and the procedure outlined by Taylor et al. [4]. Variations in modal abundances of the analyzed slides are summarized in Figure 1.

Grain Size: Grain-size measurements were determined optically by averaging up to twenty randomly selected crystals per mineral phase. The average of two perpendicular measurements per crystal was recorded. Grain-size results are reported in Table 3 along with referenced values from [2]. Lithology B maskelynites and pyroxenes have a larger grain size than A. Chromites in the analyzed lithology A sections are smaller than published results by [2]. Also, the lithology A pyroxene groundmass has a smaller crystal size than lithology B pyroxene crystals.

Conclusion: **Lithologies A and B of EETA79001 show many differences in mineral chemistry, mineral modes, and crystal size. The five analyzed sections show similarities to previous work, however there are slight differences in mineral chemistry, modal variations and the presence of orthopyroxene crystals in lithology B, slide 79001, 457.**

References: [1] Meyer C. (2003) *The Mars Meteorite Compendium*. JSC #27672, IX1-IX26; [2] McSween H.Y. & Jarosewich (1983) *GCA* 47, No. 8, 1501-1513; [3] Goodrich C.A. (2003) *GCA* 67, No. 19, 3735–3771; [4] Taylor L.A., Taylor D., Chambers J. McKay D.S. (1996) *Icarus*, 124, 500-512; [5] Steele I.M. and Smith J.V. (1982) *JGR*. 87, A375-A384; [6] Mikouchi *et al*. (1999) *EPSL* 173, 235-256.

Table 2. Average Modal Abundances of Analyzed Sections

	pig	aug	opx	mask	oliv	whit	po	chr	sil	il	Ti-mag	opq
Lithology A												
This study	**58.5**	**5.1**	**5.2**	**21.2**	**7.0**	**1.7**	**0.4**	**0.3**	**0.1**	**0.3**	**0.3**	--
McSween and Jarosewich [2]	**59.3**	**6.1**	**5.5**	**17.1**	**8.9**	**0.40**	--	--	--	--	--	**3.1**
Lithology B												
This study	**50.7**	**9.0**	**0.5**	**34.6**	**0.0**	**3.2**	**0.4**	**<0.1**	**0.5**	**0.5**	**0.5**	--
McSween and Jarosewich [2]	**39.5**	**20.0**	**0.00**	**29.1**	**0.00**	**0.37**	--	--	--	--	--	**3.5**

Mineral Abbreviations: pig - pigeonite, aug - augite, opx - orthopyroxene, mask - maskelynite, oliv - olivine, whit - whitlockite, po - pyrrhotite, chr - chromite, sil - silica, il - ilmenite, Ti-mag - titaniferous magnetite, opq – opaques

Table 3. Average Crystal Size Measurements

Mean Crystal Size (mm)			**Lithology A**		McSween and Jarosewich [2]		
	616 (A)	439 (A)	39 (A)	615 (A)	,75 (A)	,68 (A)	,79(A), 80(A)
Oliv pheno	1.16	1.18	0.91	0.69			
Opx pheno	0.77	0.77	0.50	0.52			
Pig pheno	0.58	0.96	0.69	0.95			
Pyx groundmass	0.25	0.27	0.31	0.32			
Mask	0.19	0.14	0.29	0.27			
Chromite	0.17	0.10	0.15	0.12	0.32	0.34	0.42
Oliv/Opx	1.51	1.52	1.83	1.32	2.70	3.30	3.60
Groundmass	0.24	0.24	0.36	0.36	0.14	0.15	0.15
*Sections 615, 79, and 80 contain both A and B lithologies							
Mean Crystal Size (mm)			**Lithology B**		McSween and Jarosewich [2]		
	39 (B)	615 (B)	457 (B)	392 (B)	,69 (B)	,71 (B)	,79 (B), 80 (B)
Mask	0.61	0.33	0.49	0.62			
Pyx	0.42	0.37	0.58	0.46			
Groundmass	0.62	0.40	0.71	0.46	0.37	0.30	0.28
*Sections 615, 79, and 80 contain both A and B lithologies							