Table 1. CRISM Spectra Labels, Image IDs, Center Pixels, Number of Pixels, Slope, Solar Phase Angle, and Solar Incidence Angle for Each Spectra Presented in This Paper[a]

Label in Figure	Center Pixel(s)	Number of Pixels	Slope (°)	Solar Phase Angle (°)	Solar Incidence Angle (°)
Figure 2: FRT0000A98F					
Unlabelled	X:287 Y:216, X:295 Y:218	5 × 5	13.4	46.5	52.4
Figure 3: HRL00006247					
Spectrum A (numerator)	X:98 Y:403, X:101 Y:404	5 × 5	0.3	80.5	63.9
Spectrum A (denominator)	X:98 Y:357, X:101 Y:357	5 × 5	1.5	75.7	64.9
Spectrum B (numerator)	X:54 Y:161, X:56 Y:160	5 × 5	23.4	55.0	47.6
Spectrum B (denominator)	X:54 Y:104, X:56 Y:104	5 × 5	3.2	51.0	62.7
Spectrum C (numerator)	X:130 Y:83, X:133 Y:83	5 × 5	21.3	50.3	65.1
Spectrum C (denominator)	X:130 Y:56, X:133 Y:56	5 × 5	1.4	49.1	63.3
Figure 6: FRT00009A9A					
Spectrum A (numerator)	X:250 Y:379, X:248 Y:375	5 × 5	29.6	50.5	50.8
Spectrum A (denominator)	X:250 Y:426, X:248 Y:419	5 × 5	2.9	53.7	40.2
Spectrum B (numerator)	X:572 Y:46, X:583 Y:46	5 × 5	7.5	49.2	45.5
Spectrum B (denominator)	X:572 Y:122, X:583 Y:122	5 × 5	12.2	45.4	50.9
Figure 7: FRT00009A9A					
Spectrum 1 (numerator)	X:212 Y:372, X:216 Y:372	ROIs, 398	16.7	50.2	29.5
Spectrum 1 (denominator)	X:212 Y:392, X:216 Y:392	ROIs, 492	8.6	51.6	47.5
Spectrum 2 (numerator)	X:121 Y:302, X:128 Y:301	5 × 5	22.5	45.2	33.6
Spectrum 2 (denominator)	X:121 Y:342, X:128 Y:352	5 × 5	11.5	48.5	41.9
Spectrum 3 (numerator)	X:250 Y:379, X:248 Y:375	5 × 5	29.6	50.5	50.8
Spectrum 3 (denominator)	X:250 Y:426, X:248 Y:419	5 × 5	2.9	53.7	40.2
Spectrum 4 (numerator)	X:244 Y:374, X:248 Y:374	ROIs, 1194	14.2	50.4	29.1
Spectrum 4 (denominator)	X:244 Y:395, X:248 Y:396	ROIs, 1203	12.3	52.0	47.7
Spectrum 5 (numerator)	X:355 Y:183, X:362 Y:184	5 × 5	16.3	43.1	39.4
Spectrum 5 (denominator)	X:355 Y:238, X:362 Y:233	5 × 5	5.5	43.4	39.4
Figure 9: HRL0000C1D3					
Numerator	X:60 Y:151, X:63 Y:150	5 × 5	0.6	50.5	45.7
Denominator	X:60 Y:471, X:63 Y:470	5 × 5	0.5	48.5	46.6
Figure 10: HRL00009801					
Numerator	X:74 Y:358, X:75 Y:360	11 × 11	21.1	60.9	45.8
Denominator	X:74 Y:401, X:75 Y:402	11 × 11	2.2	65.1	52.6
Figure 11: FRT0000A98F					
Numerator	X:287 Y:216, X:295 Y:218	5 × 5	13.4	46.5	52.4
Denominator	X:287 Y:2, X:295 Y:2	5 × 5	8.6	44.2	46.2

[a] The center pixel locations are for unprojected CRISM data. The first center pixel value is for the visible data, and the second center pixel value is for the infrared data. Regions of interest (ROIs) are nonrectangular collections of pixels and their center pixels are given. The slopes, solar phase angles, and solar incidence angles presented for the ROIs are those of the central pixels.

Cord et al., 2005; *Domingue and Vilas*, 2007]. However, no false absorption features are created by topographic or photometric effects [*Domingue and Vilas*, 2007]. Quantitative assessments of mineralogic abundances must account for variations in viewing and illumination geometry, but mineral identification, including broad crystal field absorptions associated with mafic silicate minerals, is not complicated by photometric variations.

[12] Atmospheric effects due to absorptions by atmospheric gases were removed from the data using the volcano scan correction method [*Mustard et al.*, 2005; *McGuire et al.*, 2009]. This method derives a spectrum of the transmission of the Martian atmosphere by ratioing spectra from the base to the peak of Olympus Mons from a single CRISM observation [*Mustard et al.*, 2008]. Because both of these regions are spectrally neutral due to their ubiquitous dust cover, the resultant ratioed spectrum cancels out surface spectral properties and is a reasonable approximation of the transmission of the atmosphere at the time of the observation. The atmospheric spectra are then scaled to the atmospheric path length of each CRISM observation based on the strength of the 2.0 μm CO_2 absorption feature. The CRISM spectra are then divided by the scaled atmospheric transmission spectrum, which removes absorptions due to atmospheric gases. Lastly, the spectral cubes were spatially and spectrally filtered to remove any additional instrumental artifacts [*Parente*, 2008].

[13] CRISM multispectral parameters were used to first identify regions of interest in both mapping tiles and targeted images. These parameters are created to be sensitive to the presence of particular absorptions or spectral properties that are commonly correlated to particular minerals [*Pelkey et al.*, 2007]. While the depth of absorption features associated with mineral spectra typically scale with mineral abundances, the particle size, albedo, and the presence of complex mineral assemblages complicate this relationship [*Clark and Roush*, 1984]. Because these spectral parameters can be nonunique, detailed spectroscopic analyses were also performed to verify the mineral detections derived from the multispectral parameters. Spectral ratioing was used as the