

Table 2. MGM Results for Fits to the Evaluation Suite Spectra Without Continuum Removal

Starting Point ^a	M1-1			M2			M1-2		
	Center ^b	FWHM ^c	Intensity ^d	Center ^b	FWHM ^c	Intensity ^d	Center ^b	FWHM ^c	Intensity ^d
<i>ISC 0 mJ Spectrum</i>									
Mg High	847.6	228.4	-0.209	1046.0	177.7	-0.257	1244.7	428.0	-0.354
Int. High	847.9	228.6	-0.210	1046.1	177.8	-0.258	1245.2	427.4	-0.355
Mg Low	847.9	228.2	-0.204	1046.0	176.9	-0.254	1243.5	426.7	-0.349
Int. Low	848.1	228.3	-0.205	1046.1	177.0	-0.255	1244.1	426.1	-0.350
<i>ISC 1 mJ Spectrum</i>									
Mg High	850.5	228.5	-0.208	1046.1	177.9	-0.260	1242.2	428.7	-0.371
Int. High	850.8	228.6	-0.209	1046.2	178.0	-0.261	1242.6	428.1	-0.372
Mg Low	850.8	228.3	-0.204	1046.1	177.2	-0.258	1241.4	427.4	-0.367
Int. Low	851.0	228.4	-0.205	1046.2	177.3	-0.259	1241.9	426.8	-0.367
<i>ISC 15 mJ Spectrum</i>									
Mg High	843.1	230.0	-0.303	1043.9	181.5	-0.291	1234.5	435.0	-0.411
Int. High	843.4	230.1	-0.303	1044.0	181.6	-0.292	1234.8	434.3	-0.411
Mg Low	841.3	229.8	-0.290	1043.4	181.0	-0.282	1230.8	434.6	-0.397
Int. Low	841.6	229.9	-0.291	1043.6	181.1	-0.283	1231.3	433.9	-0.397
<i>ISC 30 mJ Spectrum</i>									
Mg High	843.1	231.1	-0.356	1042.8	184.1	-0.309	1229.1	438.4	-0.420
Int. High	843.3	231.3	-0.355	1042.9	184.2	-0.309	1229.3	437.7	-0.419
Mg Low	840.9	230.9	-0.344	1042.2	183.3	-0.298	1224.3	437.3	-0.404
Int. Low	841.1	231.0	-0.344	1042.3	183.4	-0.299	1224.6	436.6	-0.403

^aStarting point for MGM fit. Mg/Int. refers to band positions (Mg-rich, intermediate) following the *Isaacson and Pieters* [2010] approach. High/low refers to initial continuum offset.

^bBand centers reported in nm.

^cFWHM values in nm.

^dIntensity reported as natural log reflectance.

of the approach in comparisons to terrestrial data discussed in section 3.1 and the reduced accuracy relative to analyses of laboratory data), and the data are fully calibrated (Green et al., submitted manuscript 2011), corrected for photometry [e.g., *Hicks et al.*, 2011], and corrected for thermal emission

[e.g., *Clark et al.*, 2011] (all of which are part of ongoing efforts by the M³ team), then deconvolutions of M³ olivine-dominated spectra can be used to obtain absolute olivine compositions. Evaluation of a range of terrestrial olivine compositions subjected to laser irradiation in a similar

Table 3. MGM Results for Fits to the Evaluation Suite Spectra After Continuum Removal

Starting Point ^a	M11			M2			M1-2		
	Center ^b	FWHM ^c	Intensity ^d	Center ^b	FWHM ^c	Intensity ^d	Center ^b	FWHM ^c	Intensity ^d
<i>ISC 0 mJ Spectrum</i>									
Mg High	856.6	228.2	-0.181	1048.5	177.7	-0.247	1250.2	427.7	-0.348
Int. High	856.7	228.3	-0.182	1048.6	177.8	-0.248	1250.6	427.1	-0.348
Mg Low	857.6	227.9	-0.179	1048.6	176.5	-0.245	1249.7	426.2	-0.345
Int. Low	857.7	228.0	-0.180	1048.8	176.7	-0.246	1250.1	425.5	-0.345
<i>ISC 1 mJ Spectrum</i>									
Mg High	857.8	228.3	-0.185	1048.0	177.7	-0.251	1246.0	428.2	-0.364
Int. High	858.0	228.4	-0.186	1048.1	177.9	-0.252	1246.5	427.7	-0.364
Mg Low	858.8	227.9	-0.184	1048.2	176.6	-0.250	1245.8	426.4	-0.362
Int. Low	859.0	228.1	-0.184	1048.3	176.7	-0.251	1246.2	425.9	-0.362
<i>ISC 15 mJ Spectrum</i>									
Mg High	862.7	227.8	-0.141	1049.8	176.3	-0.230	1246.0	425.1	-0.330
Int. High	862.6	227.9	-0.142	1049.8	176.4	-0.231	1246.6	424.5	-0.331
Mg Low	864.6	227.7	-0.136	1050.0	175.9	-0.226	1244.6	424.8	-0.325
Int. Low	864.7	227.7	-0.137	1050.1	175.9	-0.227	1245.1	424.0	-0.326
<i>ISC 30 mJ Spectrum</i>									
Mg High	858.2	227.7	-0.110	1049.7	175.8	-0.213	1245.2	423.0	-0.287
Int. High	858.0	227.7	-0.112	1049.8	175.9	-0.215	1246.1	422.4	-0.288
Mg Low	860.7	227.6	-0.101	1049.8	175.7	-0.205	1241.4	423.8	-0.280
Int. Low	861.1	227.7	-0.102	1049.9	175.6	-0.206	1242.0	422.9	-0.280

^aStarting point for MGM fit. Mg/Int. refers to band positions (Mg-rich, intermediate) following the *Isaacson and Pieters* [2010] approach. High/low refers to initial continuum offset.

^bBand centers reported in nm.

^cFWHM values in nm.

^dIntensity reported as natural log reflectance.