

Appendix Table 1: CRISM images used to extract spectra of Martian clays

| image location | | | context | data used | | regions of interest | | | absorptions (μm) | |
|--------------------|-----------------|----------------|-----------------------------|----------------------------|-------------|---------------------|----------------|-----------------|-------------------------------|------------------|
| <i>Description</i> | <i>Long (E)</i> | <i>Lat (N)</i> | <i>geologic context</i> | <i>CRISM image ID</i> | <i>Code</i> | <i>ROI</i> | <i>X,Y ROI</i> | <i># pixels</i> | <i>primary</i> | <i>secondary</i> |
| Nili Fossae | 73.07 | 19.57 | layered N-H crust | FRT0000A9BE_07_IF165L_TRR3 | A9BE | 1 | 286, 62 | 481 | 2.298 | 2.391 |
| | | | | | | 2 | 54, 29 | 1207 | 2.285 | 2.384 |
| Nili Fossae | 73.79 | 20.52 | layered N-H crust | FRT0000BEC0_07_IF165L_TRR3 | BEC0 | 3 | 414, 120 | 227 | 2.298 | 2.391 |
| Nili Fossae | 73.3 | 29.37 | chaos terrain | FRT0000527D_07_IF166L_TRR3 | 527D | 4 | 73, 112 | 50 | 2.285 | 2.391 |
| Nili Fossae | 76.53 | 27.82 | chaos terrain | FRT0000D452_07_IF166L_TRR3 | D452 | 5 | 455, 113 | 327 | 2.311 | 2.391 |
| | | | | | | 6 | 548, 188 | 281 | 2.285 | 2.384 |
| Nili Fossae | 73.68 | 20.08 | canyon wall | FRT00009D44_07_IF165L_TRR3 | 9D44 | 7 | 231, 357 | 152 | 2.305 | 2.384 |
| | | | | | | 8 | 361, 123 | 332 | 2.311 | 2.384 |
| Nili Fossae | 73.09 | 17.12 | crater central peak | FRT0001C50B_07_IF165L_TRR3 | 1C50B | 9 | 373, 68 | 137 | 2.311 | 2.391 |
| Nili Fossae | 74.2 | 21.29 | eroded valley | FRT00007BC8_07_IF166L_TRR3 | 7BC8 | 10 | 611, 224 | 245 | 2.305 | 2.384 |
| | | | | | | 11 | 487, 242 | 565 | 2.318 | 2.391 |
| Nili Fossae | 75.46 | 28.37 | crater rim in chaos terrain | HRL00006408_07_IF183L_TRR3 | 6408 | 12 | 60, 148 | 218 | 2.311 | 2.384 |
| Nili Fossae | 75.18 | 21.62 | Hargraves Crater ejecta | FRT000088D0_07_IF166L_TRR3 | 88D0 | 13 | 561, 373 | 218 | 2.311 | 2.384 |
| Gusev Crater | 176.18 | -15.16 | layered N-H crust | HRS00011212_07_IF173L_TRR3 | 11212 | 14 | 57, 152 | 85 | 2.285 | 2.384 |
| Gale Crater | 137.4 | -4.73 | lower mound | FRT000058A3_07_IF165L_TRR3 | 58A3 | 15 | 600, 381 | 1803 | 2.278 | 2.384 |
| Endeavour Crater | 354.65 | -2.32 | crater rim | FRT00008541_07_IF165L_TRR3 | 8541 | 16 | 571, 385 | 4 | 2.291 | 2.391 |
| Meridiani Planum | 0.12 | 2.73 | crater ejecta | FRT000099C8_07_IF165L_TRR3 | 99C8 | 17 | 280, 40 | 85 | 2.311 | 2.384 |
| | | | | | | 18 | 454, 180 | 17 | 2.311 | 2.391 |
| Mawrth Vallis | 342.34 | 23.45 | layered N-H crust | FRT0000A2C2_07_IF166L_TRR3 | A2C2 | 19 | 356, 27 | 3564 | 2.291 | 2.391 |
| Mawrth Vallis | 341.82 | 22.46 | layered N-H crust | FRT00003BFB_07_IF166L_TRR3 | 3BFB | 20 | 292, 209 | 172 | 2.285 | 2.391 |
| Mawrth Vallis | 341.12 | 24.02 | layered N-H crust | FRT000089F7_07_IF166L_TRR3 | 89F7 | 21 | 236, 125 | 811 | 2.291 | 2.391 |
| Mawrth Vallis | 341.6 | 22.98 | layered N-H crust | FRT00009326_07_IF167L_TRR3 | 9326 | 22 | 292, 157 | 278 | 2.291 | 2.384 |
| | | | | | | 23 | 122, 316 | 459 | 2.285 | 2.391 |
| Noctis Labrynthus | 261.57 | -10.45 | layered N-H crust | FRT000096EE_07_IF164L_TRR3 | 96EE | 24 | 556, 172 | 176 | 2.291 | 2.391 |
| Nigril Vallis | 319.88 | -28.16 | layered N-H crust | FRT00018B50_07_IF164L_TRR3 | 18B50 | 25 | 230, 348 | 231 | 2.298 | 2.391 |
| Tyrrhena Terra | 98.22 | -10.65 | crater central peak | FRT00008187_07_IF164L_TRR3 | 8187 | 26 | 301, 243 | 22717 | 2.318 | 2.384 |
| Tyrrhena Terra | 85.8 | 2.83 | crater central peak | FRT0001E2F2_07_IF165L_TRR3 | 1E2F2 | 27 | 570, 116 | 1123 | 2.305 | 2.384 |
| Tyrrhena Terra | 84.7 | 2.75 | eroded noachian crust | FRT00019568_07_IF165L_TRR3 | 19568 | 28 | 536, 221 | 293 | 2.318 | 2.391 |
| | | | | | | 29 | 563, 373 | 323 | 2.311 | 2.384 |
| Valles Marineris | 312.08 | -12.02 | canyon wall | FRT00008112_07_IF164L_TRR3 | 8112 | 30 | 325, 267 | 276 | 2.318 | 2.384 |