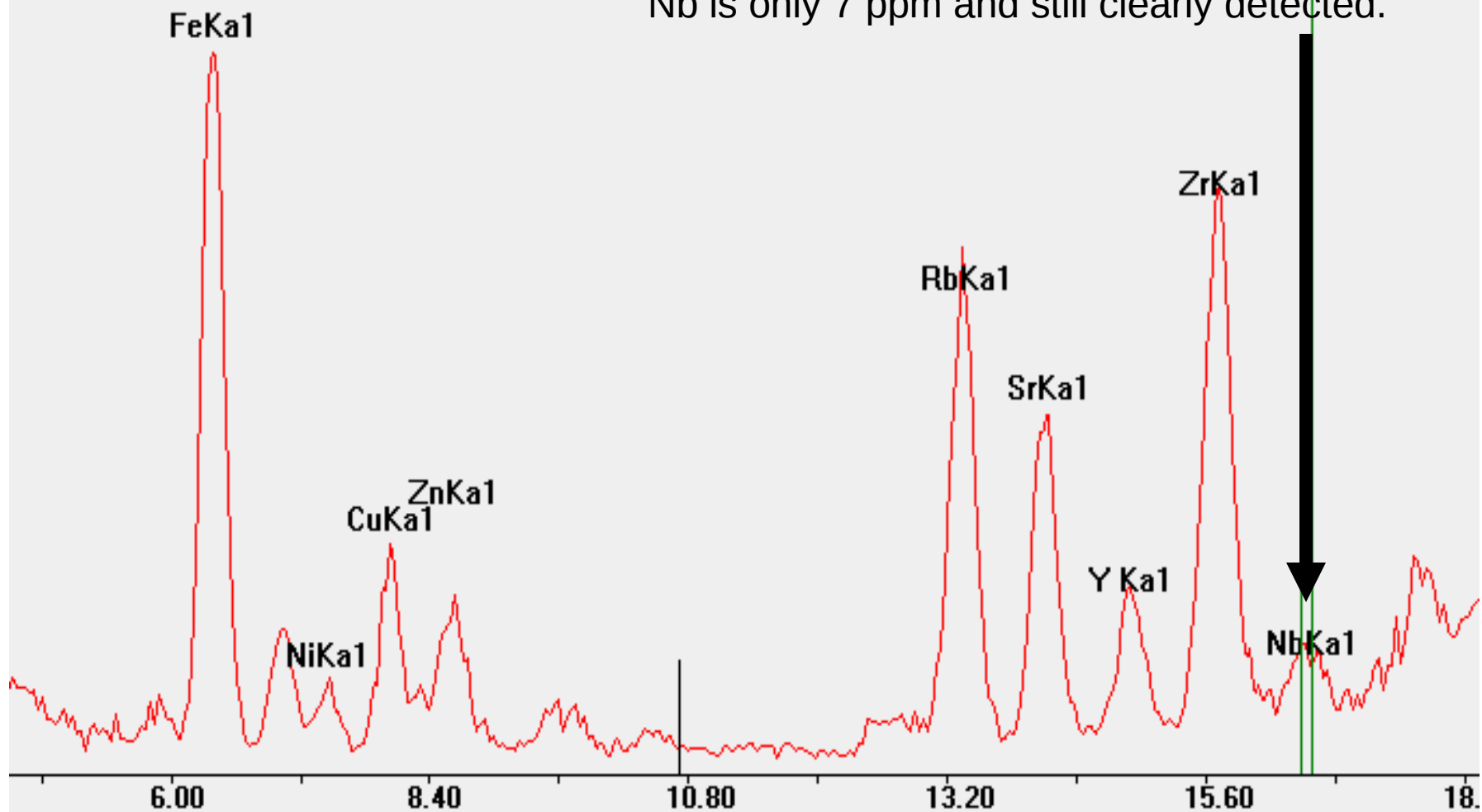


# Sourcing Obsidian

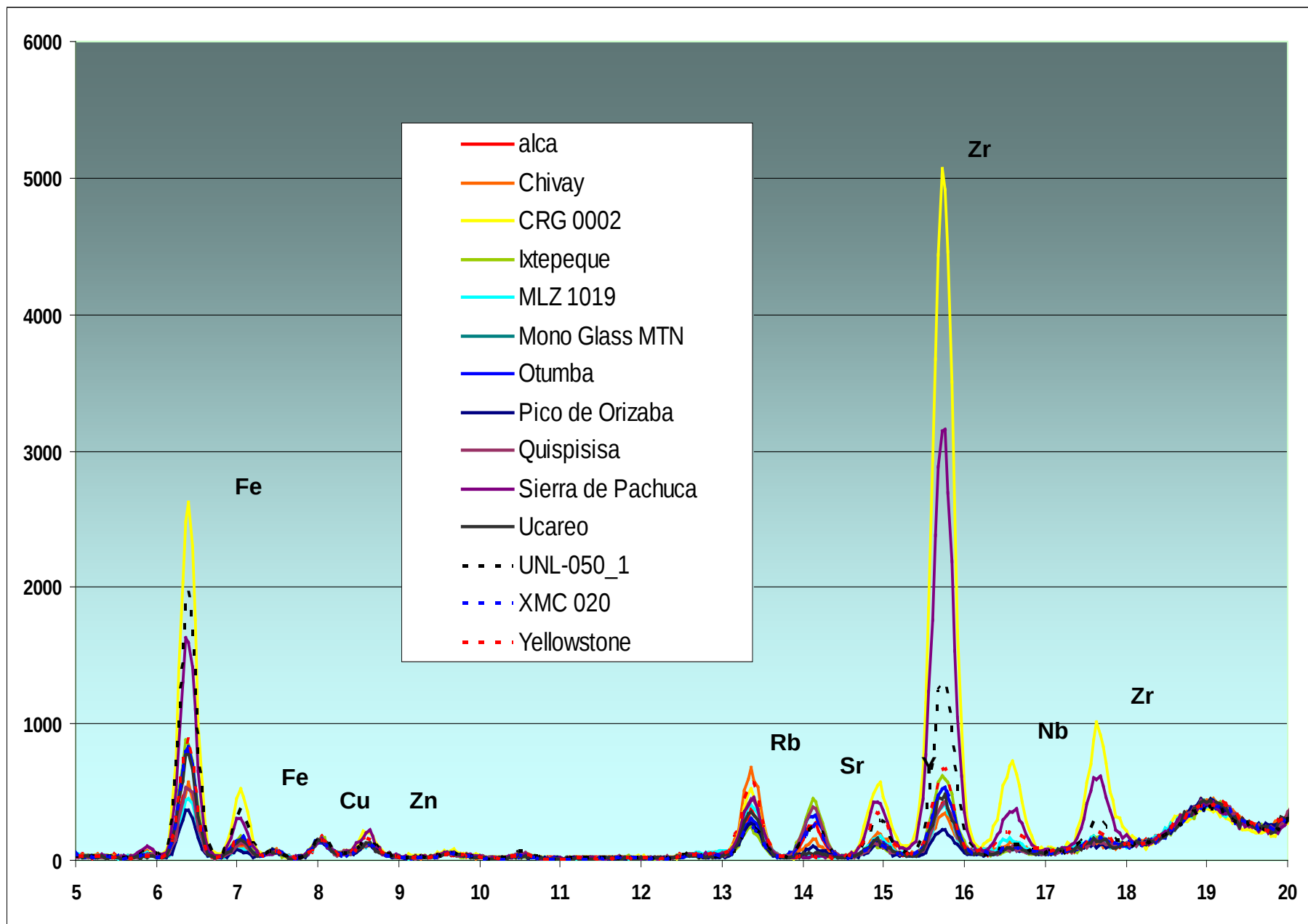
*Data by Jeff Speakman  
Smithsonian Institute*

| PPM of          | K     | Fe    | Zn  | Rb  | Sr  | Y   | Zr   | Nb |
|-----------------|-------|-------|-----|-----|-----|-----|------|----|
| Alca            | 36747 | 5435  | 39  | 136 | 71  | 14  | 82   | 7  |
| Batza Tena      | 39400 | 4876  | 38  | 170 | 5   |     | 104  |    |
| Chivay          | 36952 | 4865  | 35  | 245 | 39  | 20  | 70   | 16 |
| Edziza          | 40000 | 19750 | 225 | 203 |     |     | 1045 |    |
| Ixtepeque       | 32815 | 8917  | 29  | 95  | 154 | 19  | 167  | 6  |
| Mono Glass Mtn  | 38853 | 5427  | 32  | 196 | 2   | 32  | 79   | 22 |
| Okmok           | 32000 | 19622 | 110 | 99  | 82  |     | 400  |    |
| Otumba          | 33000 | 8019  | 40  | 117 | 121 | 24  | 132  | 10 |
| Pachuca         | 24113 | 15843 | 191 | 192 | 3   | 111 | 914  | 72 |
| Pico de Orizaba | 35216 | 3545  | 25  | 100 | 26  | 17  | 42   | 8  |
| Quispisisa      | 37806 | 5616  | 32  | 175 | 131 | 18  | 93   | 10 |
| Suemez Island   | 38500 | 27091 | 215 | 238 | 3   |     | 1552 |    |
| Ucareo          | 34848 | 7427  | 34  | 144 | 12  | 29  | 111  | 11 |
| Wiki Peak       | 35460 | 8535  | 34  | 107 | 114 |     | 170  |    |
| Yellowstone     | 41062 | 8666  | 66  | 237 | 2   | 77  | 155  | 35 |

Actual spectra of Alca showing ppm sensitivity in Obsidian. Note for example Nb is only 7 ppm and still clearly detected.



# Full Overlay of all Spectra showing variation and sensitivity



# Expanded Overlay of all Spectra showing variation and sensitivity

