

Xenon Lines in the Range from 2000 Å to 7000 Å

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XENON LINES IN THE RANGE FROM 2000 Å TO 7000 Å

By M. Gallardo and J. Reyna Almandos

This work is a compilation of lines of the xenon spectra, obtained by a non-conventional light source that covers the range from 2000 Å to 7000 Å. They have been compiled for being used as a convenient source of reference in spectroscopic work.

The table contains 4006 lines, taken from several papers, including some unpublished material made since 1969 at the LEOL (Laboratorio de Espectroscopía Óptica y Láser, Departamento de Física, Universidad Nacional de La Plata), and from September 1977 on, at the CIOp (Centro de Investigaciones Ópticas).

All spectra were produced in spectroscopically pure Xe contained in a pulsed laser tube employed as spontaneous light source.

The spectra were photographed in the customary laser configuration, i.e., end on view using two different apparatus: a 3.4 meter Eber mounting spectrograph with a plane grating of 600 grooves per millimeter blazed at 5000 Å, and a 3 meter Robin mounting vacuum spectrograph with a concave diffraction grating of 1180 grooves per millimeter blazed at 1500 Å.

The wavelengths of the lines observed with the Ebert mounting spectrograph were determined by comparing them with the Th232 spectra, and the estimated error in determining values is ± 0.05 Å, ± 0.02 Å, and ± 0.01 Å for observations made in the first, second and third order of diffraction, respectively.

In the photographic records made with the Robin mounting spectrograph, internal standard lines were employed for wavelength measuring. In these cases the estimated error is ± 0.05 Å.

In both cases, ionic assignment of most spectral lines was made varying the capacity and/or the voltage applied to the capacitor bank, and observing their behavior in line intensity. Lines corresponding to Xe I, Xe II, Xe III, and Xe IV were observed in this way. In some cases it was difficult to distinguish some lines corresponding to the spectra of these ions, and they were assigned as Xe I-II, Xe II-III, and Xe III-IV, respectively.

For the rest of the lines (generally weak ones), it was impossible to follow the intensity evolution with excitation energy.

In Table I there are listed the values in wavelength and wavenumber corresponding to all the spectral lines observed at least in two different exposures. The first, second and third columns give the wavelengths in angstroms of the lines photographed in the third, second and first order of diffraction, respectively. The fourth column gives the line wavenumber in cm^{-1} .

The fifth column lists the relative intensities of lines in the corresponding order of diffraction, in a scale from 0 to 5. The sixth column remarks the type of spectral line: W - wide, B - blended, A - asymmetric, and H - hazy. Those without remark are sharp and well defined lines. The last column shows the possible ionic species responsible for the emission.

References:

- E. Gallego Lluesma, A.A. Tagliaferri, C.A. Massone, M. Garavaglia and M. Gallardo, J. Opt. Soc. Am. 63, 362 (1973).
- A.A. Tagliaferri, E. Gallego Lluesma, M. Garavaglia, M. Gallardo and C. A. Massone, Optica Pura y Aplicada 7, 89 (1974).
- A.A. Tagliaferri, E. Gallego Lluesma, M. Garavaglia, M. Gallardo and C. A. Massone, Informe 19, C.I.C. (1975).
- M. Gallardo, C.A. Massone, A.A. Tagliaferri, M. Garavaglia and W. Persson, Physica Scripta 19, 538 (1979).
- C.A. Massone, A.A. Tagliaferri, M. Gallardo and M. Garavaglia. Unpublished material (1973).
- J. Reyna Almandos. Doctoral Thesis, Universidad Nacional de la Plata (1980).
- J. Reyna Almandos and M. Gallardo. Unpublished material (1979).
- J. Reyna Almandos, M. Gallardo and M. Garavaglia. Optica Pura y Aplicada (To be published).

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2021.14 | 49461.13 | 1 | | II - III |
| | | 2027.27 | 49311.59 | 1 | | II - III |
| | | 2036.16 | 49096.32 | 0 | A | II |
| | | 2040.42 | 48993.83 | 0 | | II |
| | | 2043.46 | 48920.95 | 0 | A | II |
| | | 2045.06 | 48882.68 | 0 | A | II - III |
| | | 2052.74 | 48699.82 | 0 | | II - III |
| | | 2053.71 | 48676.82 | 3 | | II |
| | | 2065.55 | 48397.84 | 0 | | II |
| | | 2066.62 | 48372.79 | 1 | | II - III |
| | | 2068.33 | 48332.80 | 0 | A | II |
| | | 2069.95 | 48294.97 | 0 | | II |
| | | 2076.32 | 48146.83 | 1 | | II |
| | | 2098.43 | 47639.60 | 2 | | |
| | | 2102.84 | 47539.70 | 0 | | II |
| | | 2108.24 | 47417.95 | 0 | A | II - III |
| | | 2110.69 | 47362.91 | 2 | | II - III |
| | | 2111.25 | 47350.35 | 1 | | |
| | | 2113.80 | 47293.24 | 1 | | II - III |
| | | 2116.78 | 47226.66 | 2 | | |
| | | 2117.21 | 47217.07 | 1 | | II |
| | | 2118.50 | 47188.33 | 1 | | |
| | | 2120.61 | 47141.38 | 1 | | II |
| | | 2121.38 | 47124.27 | 2 | | |
| | | 2124.73 | 47049.98 | 2 | | II |
| | | 2128.73 | 46961.58 | 1 | | II |
| | | 2131.99 | 46889.78 | 1 | | |
| | | 2138.85 | 46739.41 | 1 | | II |
| | | 2141.20 | 46688.12 | 2 | | |
| | | 2142.25 | 46665.23 | 0 | A | II - III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2144.02 | 46626.71 | 2 | | |
| | | 2145.16 | 46601.94 | 1 | | |
| | | 2146.31 | 46576.97 | 0 | A | II - III |
| | | 2148.24 | 46535.13 | 3 | | |
| | | 2153.08 | 46439.54 | 0 | A | II |
| | | 2153.96 | 46411.57 | 2 | | |
| | | 2154.90 | 46391.32 | 1 | | |
| | | 2155.17 | 46385.51 | 0 | | II - III |
| | | 2157.41 | 46337.36 | 3 | | |
| | | 2158.96 | 46304.09 | 1 | | |
| | | 2159.33 | 46296.16 | 0 | A | II - III |
| | | 2162.94 | 46218.90 | 2 | | |
| | | 2164.26 | 46190.71 | 3 | | |
| | | 2166.05 | 46152.55 | 1 | | II |
| | | 2166.43 | 46144.45 | 1 | | |
| | | 2167.84 | 46114.44 | 1 | | II |
| | | 2168.02 | 46110.61 | 1 | | |
| | | 2170.13 | 46065.79 | 1 | | |
| | | 2170.40 | 46060.06 | 1 | | II - III |
| | | 2171.64 | 46033.76 | 2 | | |
| | | 2172.78 | 46009.61 | 2 | | |
| | | 2173.85 | 45986.96 | 2 | | |
| | | 2174.78 | 45967.30 | 2 | | II |
| | | 2176.23 | 45936.67 | 2 | | II |
| | | 2177.61 | 45907.57 | 3 | | |
| | | 2178.25 | 45894.08 | 0 | | II |
| | | 2178.87 | 45881.02 | 4 | | |
| | | 2181.58 | 45824.04 | 2 | | |
| | | 2182.43 | 45806.19 | 2 | | |
| | | 2182.86 | 45797.17 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2183.24 | 45789.24 | 2 | | |
| | | 2183.76 | 45791.37 | 2 | | |
| | | 2185.26 | 45746.87 | 2 | | |
| | | 2186.41 | 45722.82 | 4 | | |
| | | 2187.99 | 45708.60 | 4 | | |
| | | 2188.14 | 45686.67 | 2 | | |
| | | 2189.82 | 45651.63 | 3 | | |
| | | 2190.49 | 45639.54 | 2 | | |
| | | 2191.66 | 45613.30 | 1 | | |
| | | 2192.78 | 45590.69 | 0 | | II - III |
| | | 2193.48 | 45575.46 | 1 | | II |
| | | 2194.47 | 45554.90 | 3 | | |
| | | 2194.99 | 45544.11 | 3 | | |
| | | 2195.93 | 45524.61 | 1 | | |
| | | 2196.80 | 45506.59 | 1 | | II - III |
| | | 2197.81 | 45485.68 | 1 | | II - III |
| | | 2202.04 | 45398.31 | 0 | A | II - III |
| | | 2202.81 | 45382.45 | 2 | | |
| | | 2204.20 | 45353.83 | 2 | | |
| | | 2205.51 | 45326.89 | 2 | | |
| | | 2205.74 | 45322.16 | 1 | | II - III |
| | | 2207.67 | 45282.55 | 3 | | |
| | | 2208.24 | 45270.86 | 3 | | II |
| | | 2208.58 | 45263.89 | 3 | | |
| | | 2210.12 | 45232.36 | 1 | | II - III |
| | | 2211.35 | 45207.20 | 0 | W | II - III |
| | | 2213.12 | 45171.95 | 3 | | |
| | | 2213.94 | 45154.32 | 3 | | |
| | | 2214.37 | 45145.55 | 3 | | II |
| | | 2215.47 | 45123.14 | 2 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2215.58 | 45120.90 | 2 | | II |
| | | 2216.28 | 45106.65 | 1 | | II - III |
| | | 2220.36 | 45023.77 | 3 | | |
| | | 2222.76 | 44975.16 | 3 | | II |
| | | 2224.59 | 44938.17 | 2 | | II |
| | | 2225.11 | 44927.67 | 3 | | |
| | | 2225.99 | 44909.91 | 2 | | II |
| | | 2226.86 | 44892.36 | 1 | | |
| | | 2228.33 | 44862.75 | 3 | | |
| | | 2229.91 | 44830.97 | 3 | | |
| | | 2230.81 | 44812.88 | 3 | | II |
| | | 2231.79 | 44793.21 | 0 | A | II - III |
| | | 2232.51 | 44778.76 | 1 | | II - III |
| | | 2232.83 | 44772.35 | 2 | | II |
| | | 2234.47 | 44739.49 | 2 | | |
| | | 2234.99 | 44729.08 | 1 | | II |
| | | 2235.52 | 44718.47 | 2 | | II |
| | | 2236.11 | 44706.68 | 3 | | |
| | | 2237.04 | 44688.10 | 1 | | II - III |
| | | 2238.44 | 44667.15 | 4 | | |
| | | 2239.01 | 44648.78 | 1 | | |
| | | 2239.48 | 44639.41 | 2 | | |
| | | 2239.79 | 44633.23 | 1 | | II |
| | | 2239.94 | 44630.24 | 4 | | |
| | | 2240.37 | 44621.68 | 3 | | |
| | | 2241.56 | 44597.99 | 1 | | II |
| | | 2241.85 | 44592.22 | 3 | | II |
| | | 2242.18 | 44585.66 | 2 | | |
| | | 2242.39 | 44581.49 | 0 | | III - IV |
| | | 2242.54 | 44578.51 | 2 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2243.98 | 44549.90 | 1 | | II - III |
| | | 2244.52 | 44539.18 | 3 | | |
| | | 2244.84 | 44532.84 | 1 | | II - III |
| | | 2245.61 | 44517.57 | 1 | | |
| | | 2245.82 | 44513.21 | 1 | | II - III |
| | | 2246.65 | 44496.96 | 3 | | |
| | | 2247.17 | 44486.66 | 1 | | II |
| | | 2248.22 | 44465.89 | 1 | | II |
| | | 2249.90 | 44432.69 | 3 | | |
| | | 2250.29 | 44424.99 | 3 | | |
| | | 2251.45 | 44402.10 | 2 | | |
| | | 2253.07 | 44370.18 | 0 | | II - III |
| | | 2254.74 | 44337.32 | 1 | | II |
| | | 2255.11 | 44330.05 | 4 | | |
| | | 2255.52 | 44321.99 | 1 | | |
| | | 2255.72 | 44318.06 | 2 | | |
| | | 2256.57 | 44301.37 | 2 | | II |
| | | 2256.82 | 44296.46 | 2 | | II |
| | | 2257.12 | 44290.57 | 5 | | |
| | | 2258.19 | 44269.59 | 0 | A | II - III |
| | | 2258.66 | 44260.38 | 1 | | |
| | | 2259.16 | 44250.58 | 1 | | |
| | | 2259.78 | 44238.45 | 3 | | |
| | | 2260.58 | 44222.79 | 3 | | |
| | | 2261.33 | 44208.12 | 0 | | II - III |
| | | 2262.95 | 44176.48 | 3 | | II |
| | | 2264.20 | 44152.09 | 3 | | II |
| | | 2264.99 | 44136.69 | 3 | | |
| | | 2265.61 | 44124.62 | 4 | | II |
| | | 2265.93 | 44118.39 | 3 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2266.79 | 44101.65 | 3 | | II |
| | | 2268.71 | 44064.33 | 3 | | II |
| | | 2269.36 | 44051.71 | 1 | | |
| | | 2270.59 | 44027.85 | 4 | | |
| | | 2271.07 | 44018.55 | 0 | | II - III |
| | | 2271.39 | 44012.34 | 1 | | II - III |
| | | 2271.62 | 44007.89 | 0 | | II - III |
| | | 2273.18 | 43977.69 | 1 | | II - III |
| | | 2273.37 | 43974.02 | 3 | | |
| | | 2274.96 | 43943.28 | 3 | A | II |
| | | 2275.93 | 43924.56 | 0 | A | II - III |
| | | 2276.52 | 43913.18 | 1 | | |
| | | 2279.44 | 43856.92 | 2 | | |
| | | 2279.74 | 43851.15 | 1 | | |
| | | 2281.13 | 43824.44 | 2 | | |
| | | 2281.50 | 43817.33 | 1 | | |
| | | 2282.60 | 43796.22 | 0 | B | II - III |
| | | 2283.14 | 43785.86 | 5 | | II |
| | | 2283.95 | 43770.33 | 3 | | |
| | | 2284.76 | 43754.81 | 2 | | |
| | | 2285.27 | 43745.05 | 3 | | II |
| | | 2285.96 | 43731.85 | 5 | | II |
| | | 2286.64 | 43718.84 | 1 | | |
| | | 2287.13 | 43709.48 | 1 | | |
| | | 2287.92 | 43694.39 | 2 | | |
| | | 2288.56 | 43682.17 | 0 | A | II - III |
| | | 2288.90 | 43675.68 | 3 | | |
| | | 2289.18 | 43670.34 | 0 | A | II - III |
| | | 2289.46 | 43665.00 | 3 | | |
| | | 2289.96 | 43655.47 | 3 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2290.67 | 43642.89 | 3 | H | |
| | | 2290.86 | 43638.32 | 3 | | II |
| | | 2291.93 | 43617.95 | 1 | | II |
| | | 2292.44 | 43608.24 | 5 | W | II |
| | | 2293.21 | 43593.60 | 2 | | |
| | | 2294.59 | 43567.39 | 5 | | II |
| | | 2295.27 | 43554.48 | 1 | | II - III |
| | | 2295.89 | 43542.72 | 2 | | |
| | | 2296.17 | 43537.41 | 2 | | |
| | | 2296.56 | 43530.02 | 5 | W | II |
| | | 2296.85 | 43524.52 | 4 | W | |
| | | 2297.98 | 43503.12 | 3 | | |
| | | 2299.38 | 43476.64 | 3 | | II |
| | | 2300.01 | 43464.73 | 4 | | II |
| | | 2300.35 | 43458.31 | 1 | | |
| | | 2300.72 | 43451.32 | 0 | B | II - III |
| | | 2300.84 | 43449.05 | 0 | B | II - III |
| | | 2301.40 | 43438.48 | 0 | W | II - III |
| | | 2302.81 | 43411.89 | 1 | | II - III |
| | | 2303.75 | 43394.17 | 1 | | III |
| | | 2304.12 | 43387.21 | 2 | | |
| | | 2304.62 | 43377.79 | 2 | A | II |
| | | 2305.56 | 43360.11 | 1 | | |
| | | 2306.59 | 43340.75 | 3 | | |
| | | 2307.33 | 43326.85 | 4 | A | II |
| | | 2308.15 | 43311.46 | 3 | | II |
| | | 2308.32 | 43308.27 | 3 | | |
| | | 2308.60 | 43303.02 | 2 | | |
| | | 2311.04 | 43257.30 | 1 | | |
| | | 2311.46 | 43249.44 | 2 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2312.30 | 43233.73 | 0 | | III |
| | | 2312.75 | 43225.32 | 0 | | II - III |
| | | 2313.40 | 43213.18 | 2 | | II - III |
| | | 2313.72 | 43207.20 | 4 | | II |
| | | 2314.21 | 43198.05 | 1 | B | |
| | | 2314.40 | 43194.51 | 1 | B | |
| | | 2315.56 | 43172.87 | 2 | | |
| | | 2316.27 | 43159.64 | 2 | | II |
| | | 2316.81 | 43149.58 | 3 | | |
| | | 2317.12 | 43143.81 | 2 | | |
| | | 2317.55 | 43135.80 | 0 | B | II - III |
| | | 2318.04 | 43126.69 | 3 | | |
| | | 2319.73 | 43095.27 | 5 | | II |
| | | 2320.60 | 43079.11 | 1 | | |
| | | 2321.54 | 43061.67 | 0 | | II - III |
| | | 2323.10 | 43032.76 | 2 | | |
| | | 2323.48 | 43025.72 | 0 | | II - III |
| | | 2325.31 | 42991.86 | 0 | A | II - III |
| | | 2327.05 | 42959.72 | 3 | | |
| | | 2327.26 | 42955.84 | 3 | | |
| | | 2331.28 | 42881.78 | 1 | | II - III |
| | | 2331.40 | 42879.57 | 2 | | |
| | | 2332.26 | 42863.76 | 0 | A | II - III |
| | | 2333.80 | 42835.48 | 0 | | II - III |
| | | 2335.07 | 42812.18 | 0 | B | II - III |
| | | 2335.46 | 42805.03 | 4 | | II |
| | | 2338.29 | 42753.23 | 3 | | |
| | | 2338.58 | 42747.93 | 3 | | |
| | | 2340.60 | 42711.04 | 1 | A | II - III |
| | | 2340.92 | 42705.20 | 4 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2342.21 | 42681.68 | 3 | | II |
| | 2343.54 | | 42657.47 | 2 | | |
| | 2344.47 | | 42640.54 | 0 | | II |
| | 2344.69 | | 42631.09 | 0 | | |
| | 2345.28 | | 42625.82 | 2 | | |
| | | 2346.28 | 42607.65 | 1 | | II - III |
| | | 2346.86 | 42597.12 | 1 | | |
| | | 2347.86 | 42578.98 | 1 | | II - III |
| | | 2348.02 | 42576.08 | 1 | | |
| | | 2348.48 | 42567.74 | 0 | | II - III |
| | | 2349.41 | 42550.89 | 0 | | II - III |
| | | 2350.10 | 42538.40 | 0 | A | II |
| | 2350.53 | | 42530.62 | 0 | | |
| | | 2350.70 | 42527.54 | 0 | | II |
| | 2351.01 | | 42521.94 | 0 | | |
| | | 2351.19 | 42518.68 | 3 | | II |
| | 2351.44 | | 42514.16 | 1 | | |
| | | 2351.58 | 42511.63 | 3 | | II |
| | | 2352.06 | 42502.96 | 1 | | II |
| | | 2353.52 | 42476.59 | 2 | | II |
| | 2353.95 | | 42468.83 | 0 | | II |
| | 2354.45 | | 42459.81 | 0 | | II - III |
| | | 2354.97 | 42450.44 | 1 | | II - III |
| | 2355.70 | | 42437.28 | 1 | | |
| | | 2356.27 | 42427.02 | 2 | | II |
| | | 2356.77 | 42418.02 | 4 | B | II |
| | | 2357.10 | 42412.08 | 3 | B | |
| | 2360.20 | | 42356.38 | 0 | | |
| | | 2360.44 | 42352.07 | 3 | | II |
| | 2360.85 | | 42344.72 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2362.62 | 42313.00 | 3 | | II |
| | | 2362.90 | 42307.99 | 0 | B | II - III |
| | 2364.13 | | 42285.98 | 0 | | II - III |
| | | 2364.63 | 42277.04 | 0 | | II - III |
| | 2365.41 | | 42263.09 | 1 | | II - III |
| | 2365.55 | | 42260.60 | 1 | | |
| | 2366.12 | | 42250.41 | 2 | | II - III |
| | 2367.81 | | 42220.26 | 0 | | |
| | 2368.69 | | 42204.58 | 0 | | II |
| | 2369.03 | | 42198.52 | 0 | | |
| | 2369.38 | | 42192.29 | 1 | | |
| | 2369.58 | | 42188.73 | 1 | | |
| | 2370.52 | | 42172.00 | 0 | | |
| | 2371.89 | | 42147.64 | 1 | | |
| | 2372.47 | | 42137.34 | 1 | | |
| | 2372.86 | | 42130.41 | 1 | | |
| | 2374.15 | | 42107.52 | 1 | | |
| | | 2374.68 | 42098.13 | 0 | A | II - III |
| | 2375.12 | | 42090.33 | 1 | | |
| | 2376.45 | | 42066.77 | 0 | | |
| | | 2378.07 | 42038.12 | 3 | | II |
| | 2378.26 | | 42034.76 | 1 | | |
| | | 2378.79 | 42025.40 | 1 | | |
| | | 2379.11 | 42019.74 | 0 | | II - III |
| | | 2380.45 | 41996.09 | 0 | A | II - III |
| | 2381.96 | | 41969.47 | 0 | | |
| | 2382.07 | | 41967.54 | 0 | | II - III |
| | 2382.19 | | 41965.42 | 1 | | |
| | | 2382.34 | 41962.78 | 0 | B | II - III |
| | 2383.25 | | 41946.76 | 1 | | II - III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2385.27 | | 41911.24 | 3 | | |
| | 2385.66 | | 41904.38 | 1 | | |
| | | 2385.96 | 41899.12 | 1 | P | II |
| | 2386.14 | | 41895.96 | 0 | | II |
| | | 2386.78 | 41884.73 | 1 | A | II - III |
| | 2386.89 | | 41882.79 | 0 | | |
| | 2387.76 | | 41867.54 | 0 | | |
| | 2388.56 | | 41853.51 | 1 | | II - III |
| | 2390.73 | | 41815.52 | 0 | | |
| | | 2391.10 | 41809.06 | 2 | | II - III |
| | 2392.18 | | 41790.18 | 1 | | |
| | 2392.37 | | 41786.86 | 1 | | |
| | 2393.89 | | 41760.51 | 1 | | |
| | 2394.07 | | 41757.19 | 1 | | II - III |
| | 2394.31 | | 41753.01 | 1 | | |
| | 2394.45 | | 41750.57 | 1 | | |
| | | 2395.32 | 41735.23 | 1 | W | II - III |
| | | 2395.90 | 41725.30 | 1 | A | II - III |
| | 2397.55 | | 41696.59 | 0 | | |
| | 2398.76 | | 41675.56 | 0 | A | II |
| | | 2399.95 | 41654.89 | 1 | | II - III |
| | 2400.50 | | 41645.35 | 3 | | |
| | 2400.78 | | 41640.50 | 1 | | |
| | | 2401.82 | 41622.47 | 2 | | II |
| | | 2402.41 | 41612.24 | 1 | | |
| | 2402.77 | | 41588.70 | 1 | | III |
| | | 2404.27 | 41580.06 | 0 | A | II - III |
| | | 2404.84 | 41570.20 | 1 | | II |
| | 2406.00 | | 41550.16 | 0 | | II |
| | 2407.63 | | 41522.03 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2408.30 | | 41510.48 | 1 | | |
| | 2408.41 | | 41508.58 | 2 | | |
| | 2409.59 | | 41488.26 | 3 | | |
| | 2409.75 | | 41485.51 | 1 | | II |
| | 2410.74 | | 41468.47 | 2 | | |
| | 2411.08 | | 41462.62 | 1 | | |
| | 2412.48 | | 41438.56 | 0 | | |
| | 2412.87 | | 41431.87 | 2 | | |
| | 2413.44 | | 41422.08 | 2 | | |
| | 2413.84 | | 41415.22 | 2 | | II - III |
| | | 2414.39 | 41405.78 | 0 | B | II - III |
| | 2414.53 | | 41403.38 | 1 | | III |
| | 2414.67 | | 41400.98 | 1 | | |
| | | 2415.43 | 41387.96 | 0 | A | II - III |
| | 2415.61 | | 41384.87 | 3 | | |
| | 2416.72 | | 41365.86 | 3 | | III |
| | 2418.33 | | 41338.33 | 2 | A | |
| | 2418.72 | | 41331.66 | 1 | | |
| | | 2419.50 | 41318.34 | 0 | | II - III |
| | 2419.73 | | 41314.41 | 0 | | II - III |
| | 2420.81 | | 41295.99 | 3 | | II |
| | 2421.23 | | 41288.82 | 1 | | II |
| | 2422.12 | | 41273.65 | 3 | | |
| | 2422.73 | | 41263.26 | 1 | | |
| | 2422.84 | | 41259.68 | 1 | A | II |
| | 2423.93 | | 41243.68 | 0 | | |
| | 2425.84 | | 41223.96 | 2 | | II |
| | 2428.57 | | 41157.26 | 4 | | |
| | | 2429.75 | 41144.05 | 0 | A | II - III |
| | | 2430.27 | 41135.25 | 0 | A | II - III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2431.07 | | 41121.71 | 2 | | |
| | 2432.35 | | 41100.07 | 1 | | |
| | 2432.73 | | 41093.65 | 1 | | II |
| | 2433.59 | | 41079.13 | 3 | | |
| | 2435.46 | | 41047.59 | 1 | | II |
| | 2435.82 | | 41041.53 | 2 | | |
| | 2436.46 | | 41030.75 | 2 | | III |
| | 2436.78 | | 41025.36 | 1 | | |
| | 2438.08 | | 41003.49 | 0 | | |
| | | 2438.72 | 40992.73 | 0 | | II |
| | | 2439.48 | 40979.96 | 0 | | II - III |
| | | 2439.78 | 40974.92 | 0 | | II - III |
| | 2441.49 | | 40946.22 | 5 | | |
| | | 2441.63 | 40943.87 | 1 | B | II |
| | 2441.86 | | 40940.02 | 4 | | |
| | 2442.54 | | 40928.62 | 1 | | |
| | 2442.70 | | 40925.94 | 0 | B | |
| | 2442.81 | | 40924.10 | 1 | B | |
| | 2443.37 | | 40914.72 | 3 | | |
| | | 2444.37 | 40897.98 | 2 | | II |
| | | 2444.89 | 40889.28 | 2 | W | II |
| | 2445.51 | | 40878.92 | 0 | | II - III |
| | 2446.08 | | 40869.39 | 3 | | |
| | | 2446.79 | 40857.54 | 0 | | II |
| | 2447.05 | | 40853.20 | 1 | | II - III |
| | 2447.64 | | 40843.35 | 3 | | III |
| | 2448.46 | | 40829.67 | 0 | | |
| | 2449.04 | | 40820.00 | 2 | | |
| | 2450.90 | | 40789.02 | 2 | | |
| | 2451.37 | | 40781.20 | 2 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2452.62 | | 40760.42 | 1 | | III |
| | 2454.25 | | 40733.35 | 1 | | |
| | 2455.05 | | 40720.08 | 4 | | |
| | 2455.83 | | 40707.15 | 2 | | |
| | | 2459.02 | 40654.35 | 0 | A | II - III |
| | 2459.75 | | 40642.28 | 1 | | |
| | 2462.66 | | 40594.26 | 1 | | |
| | 2463.02 | | 40588.33 | 1 | | III |
| | 2463.55 | | 40579.59 | 1 | | II - III |
| | 2464.49 | | 40564.12 | 0 | | |
| | 2465.75 | | 40543.39 | 1 | | |
| | | 2466.62 | 40529.09 | 3 | | II |
| | 2467.43 | | 40515.79 | 2 | | |
| | 2468.37 | | 40500.36 | 2 | A | II |
| | 2469.45 | | 40482.65 | 1 | | II |
| | 2470.17 | | 40470.85 | 1 | | II |
| | 2470.74 | | 40461.52 | 2 | | |
| | 2471.28 | | 40452.67 | 2 | | III |
| | 2472.25 | | 40436.80 | 1 | | |
| | 2472.34 | | 40435.33 | 1 | | III |
| | 2473.11 | | 40422.74 | 5 | | |
| | 2473.77 | | 40411.96 | 1 | | |
| | 2474.82 | | 40394.81 | 2 | | |
| | 2475.50 | | 40377.10 | 5 | B | |
| | 2476.03 | | 40375.08 | 2 | B | |
| | 2477.34 | | 40353.73 | 1 | | |
| | 2478.54 | | 40334.19 | 2 | | II |
| | 2478.93 | | 40329.47 | 0 | | II |
| | 2479.11 | | 40324.92 | 0 | | |
| | | 2479.40 | 40320.20 | 1 | | II - III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2479.83 | | 40313.21 | 1 | | II - III |
| | 2480.30 | | 40305.57 | 2 | | |
| | 2482.09 | | 40276.51 | 2 | | |
| | 2483.44 | | 40254.61 | 1 | | III |
| | 2484.00 | | 40229.51 | 1 | | II - III |
| | 2485.41 | | 40222.71 | 3 | | |
| | 2485.56 | | 40213.91 | 1 | | |
| | 2486.70 | | 40201.84 | 1 | | III |
| | 2489.07 | | 40163.57 | 2 | | II |
| | 2490.60 | | 40138.90 | 2 | | |
| | 2490.75 | | 40136.48 | 1 | | II |
| | 2491.80 | | 40119.57 | 0 | | II |
| | 2492.56 | | 40107.34 | 2 | | |
| | 2493.05 | | 40099.45 | 3 | | |
| | 2495.10 | | 40066.51 | 3 | A | |
| | 2495.51 | | 40059.93 | 0 | | |
| | 2496.74 | | 40040.20 | 0 | | II - III |
| | 2497.02 | | 40035.71 | 1 | | |
| | 2497.70 | | 40024.89 | 0 | | II |
| | 2498.06 | | 40019.04 | 3 | | |
| | 2498.99 | | 40004.15 | 1 | | |
| | 2499.55 | | 39995.18 | 1 | | |
| | 2500.45 | | 39980.79 | 0 | | |
| | 2500.80 | | 39975.19 | 0 | | |
| | 2501.04 | | 39971.36 | 1 | | |
| | 2502.73 | | 39944.37 | 1 | | |
| | 2503.93 | | 39925.23 | 1 | | |
| | 2504.91 | | 39909.61 | 1 | | II - III |
| | 2505.33 | | 39902.02 | 1 | | |
| | | 2505.00 | 39892.84 | 0 | | II - III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2516.26 | | 39888.11 | 1 | | |
| | | 2507.16 | 39873.79 | 1 | | II - III |
| | 2508.41 | | 39854.08 | 2 | | |
| | 2509.74 | | 39832.81 | 0 | | |
| | | 2507.98 | 39829.00 | 0 | | |
| | 2510.49 | | 39820.91 | 2 | | III |
| | 2511.29 | | 39808.22 | 0 | | |
| | 2513.34 | | 39775.76 | 0 | | |
| | 2514.09 | | 39763.89 | 0 | H | |
| | 2514.69 | | 39754.40 | 2 | | |
| | 2515.12 | | 39747.61 | 1 | | III |
| | | 2516.11 | 39731.97 | 0 | A | II - III |
| | 2516.73 | | 39722.18 | 2 | | |
| | 2517.11 | | 39716.19 | 1 | | II |
| | 2520.14 | | 39668.44 | 2 | | |
| | 2521.43 | | 39648.14 | 1 | | |
| | 2522.04 | | 39638.56 | 1 | | |
| | | 2523.67 | 39612.95 | 0 | | II |
| | 2523.97 | | 39608.25 | 1 | | II - III |
| | 2524.24 | | 39604.01 | 1 | | |
| | 2524.45 | | 39600.71 | 0 | | II |
| | 2524.92 | | 39593.34 | 1 | | |
| | 2525.51 | | 39584.10 | 1 | | |
| | 2526.63 | | 39566.55 | 3 | | |
| | 2526.83 | | 39563.42 | 2 | | |
| | 2526.94 | | 39561.70 | 2 | | II |
| | 2528.86 | | 39531.66 | 0 | | |
| | 2529.58 | | 39520.41 | 1 | | |
| | 2530.19 | | 39510.88 | 0 | | II |
| | 2531.30 | | 39493.56 | 0 | H | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2532.91 | 39468.46 | 0 | A | |
| | 2533.32 | | 39462.07 | 1 | | III |
| | 2534.18 | | 39448.68 | 1 | | |
| | 2535.44 | | 39429.07 | 1 | | |
| | 2536.87 | | 39406.85 | 2 | | |
| | 2538.60 | | 39381.00 | 3 | | II |
| | 2538.92 | | 39375.03 | 0 | | |
| | 2541.73 | | 39342.34 | 0 | | |
| | 2541.27 | | 39338.63 | 1 | A | |
| | 2541.83 | | 39329.19 | 0 | | |
| | 2543.95 | | 39297.19 | 0 | | |
| | 2544.10 | | 39294.87 | 0 | | |
| | 2544.95 | | 39281.75 | 0 | | |
| | 2546.41 | | 39259.22 | 0 | | II |
| | 2548.88 | | 39221.18 | 0 | | |
| | | 2548.98 | 39219.65 | 0 | | II - III |
| | 2549.45 | | 39212.41 | 1 | | |
| | 2549.74 | | 39207.96 | 1 | | |
| | 2550.55 | | 39195.51 | 0 | | |
| | 2551.71 | | 39177.69 | 0 | | |
| | 2552.10 | | 39170.47 | 5 | | |
| | 2552.92 | | 39159.12 | 0 | A | |
| | | 2553.70 | 39145.78 | 0 | | II |
| | | 2554.12 | 39139.80 | 0 | | II |
| | 2556.15 | | 39109.64 | 3 | | |
| | 2557.59 | | 39087.62 | 1 | | |
| 2559.90 | | | 39067.61 | 0 | | |
| 2559.29 | | | 39061.66 | 0 | | |
| | 2559.94 | | 39051.74 | 2 | | |
| | 2560.88 | | 39037.41 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2561.01 | | | 39035.43 | 2 | | |
| 2561.24 | | | 39031.92 | 1 | | |
| | 2562.04 | | 39019.74 | 0 | H | |
| 2563.34 | | | 38999.95 | 0 | | |
| | 2564.13 | | 38987.93 | 2 | | |
| 2564.92 | | | 38975.92 | 0 | | |
| 2565.72 | | | 38963.78 | 0 | | |
| 2566.51 | | | 38951.78 | 1 | | |
| | 2567.09 | | 38942.98 | 0 | | |
| 2568.81 | | | 38916.91 | 0 | | III |
| | 2569.38 | | 38908.27 | 2 | | |
| 2569.51 | | | 38906.31 | 1 | | |
| | 2570.26 | | 38894.96 | 0 | | |
| 2571.43 | | | 38877.26 | 0 | | |
| 2572.32 | | | 38863.66 | 1 | | |
| 2572.93 | | | 38854.59 | 0 | | II |
| | 2573.36 | | 38848.10 | 0 | | |
| | 2573.59 | | 38844.63 | 1 | | |
| 2574.02 | | | 38838.14 | 1 | | III |
| 2574.61 | | | 38829.24 | 1 | | |
| | | 2575.75 | 38812.06 | 0 | | III |
| 2576.29 | | | 38804.07 | 0 | | |
| 2576.44 | | | 38801.66 | 0 | | |
| 2576.97 | | | 38793.69 | 0 | | |
| 2578.37 | | | 38772.62 | 0 | | |
| | 2578.62 | | 38768.86 | 1 | | |
| | 2578.89 | | 38764.80 | 0 | | III |
| | 2579.46 | | 38756.24 | 1 | | |
| 2579.75 | | | 38751.83 | 1 | | |
| 2580.90 | | | 38734.62 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2582.32 | | | 38713.17 | 0 | | |
| | 2583.74 | | 38692.04 | 0 | | |
| 2584.11 | | | 38686.53 | 0 | A | |
| | | 2584.92 | 38674.38 | 2 | | |
| 2585.20 | | | 38670.19 | 2 | | |
| 2586.11 | | | 38656.59 | 0 | | |
| 2586.96 | | | 38643.89 | 1 | | |
| | 2587.59 | | 38634.48 | 0 | A | |
| 2588.12 | | | 38626.57 | 1 | | |
| 2588.76 | | | 38617.02 | 0 | W | |
| 2588.89 | | | 38615.08 | 0 | | |
| 2589.98 | | | 38598.83 | 1 | | |
| 2590.24 | | | 38594.96 | 0 | | |
| | 2590.42 | | 38592.27 | 1 | | |
| 2591.14 | | | 38581.55 | 1 | | |
| | 2591.24 | | 38580.06 | 1 | | III |
| | 2591.69 | | 38573.36 | 1 | | |
| | | 2592.50 | 38561.31 | 0 | W | II - III |
| | 2594.53 | | 38531.14 | 0 | | |
| 2594.83 | | | 38526.69 | 0 | | |
| | 2595.03 | | 38523.72 | 0 | A | |
| | 2595.56 | | 38515.85 | 0 | | |
| | 2595.67 | | 38509.77 | 1 | | |
| | 2596.23 | | 38505.92 | 0 | | |
| 2596.69 | | | 38499.09 | 1 | | |
| | 2596.99 | | 38494.65 | 1 | | II |
| | 2597.25 | | 38490.79 | 0 | | |
| | 2598.42 | | 38473.46 | 0 | | |
| | 2599.62 | | 38455.70 | 1 | | |
| 2600.07 | | | 38449.05 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2600.12 | | 38448.31 | 1 | B | III |
| 2602.44 | | | 38414.03 | 0 | | |
| | 2603.52 | | 38398.10 | 0 | | |
| 2603.95 | | | 38391.76 | 0 | | |
| | 2604.29 | | 38386.75 | 1 | | |
| 2605.21 | | | 38373.20 | 1 | | |
| 2605.57 | | | 38367.89 | 0 | | II |
| | 2606.32 | | 38356.85 | 0 | | |
| | 2606.95 | | 38347.59 | 0 | | |
| | 2607.50 | | 38339.50 | 1 | | |
| 2607.97 | | | 38332.59 | 1 | | |
| | 2608.32 | | 38327.30 | 0 | | |
| | 2608.58 | | 38323.62 | 0 | | |
| 2608.91 | | | 38318.77 | 0 | | III |
| | 2609.82 | | 38305.42 | 0 | | |
| 2610.29 | | | 38299.84 | 0 | | III |
| | 2610.57 | | 38294.41 | 0 | | |
| | 2611.03 | | 38287.67 | 0 | | |
| 2612.37 | | | 38268.03 | 0 | | IV |
| 2612.63 | | | 38264.22 | 1 | | IV |
| 2612.85 | | | 38261.00 | 1 | | |
| 2613.77 | | | 38247.53 | 1 | | III - IV |
| | 2613.99 | | 38244.31 | 1 | | III |
| 2615.02 | | | 38229.25 | 3 | | II |
| | 2615.40 | | 38223.69 | 0 | | |
| 2615.55 | | | 38220.92 | 0 | | IV |
| | 2616.63 | | 38205.73 | 0 | | |
| | 2616.90 | | 38201.79 | 0 | | |
| 2619.70 | | | 38160.96 | 0 | | IV |
| | | 2619.85 | 38158.77 | 1 | W | II - III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2621.62 | | | 38133.01 | 0 | | |
| 2621.78 | | | 38130.69 | 0 | | II |
| | 2622.74 | | 38116.73 | 0 | | |
| | | 2623.17 | 38110.48 | 2 | | II |
| | 2624.52 | | 38090.88 | 0 | | |
| 2625.93 | | | 38070.43 | 0 | | II |
| | 2626.98 | | 38055.21 | 1 | | |
| | | 2628.30 | 38036.10 | 1 | | III |
| | | 2628.71 | 38030.17 | 1 | A | III |
| 2629.05 | | | 38025.25 | 1 | | II |
| | 2629.59 | | 38017.44 | 0 | | |
| 2630.02 | | | 38011.23 | 1 | | III |
| | 2630.40 | | 38005.73 | 1 | | |
| | 2631.14 | | 37995.05 | 1 | | |
| | 2633.39 | | 37962.58 | 1 | | |
| 2633.72 | | | 37957.83 | 2 | | II |
| | 2633.93 | | 37954.80 | 0 | | |
| 2634.21 | | | 37950.77 | 0 | | II |
| | 2635.64 | | 37930.18 | 0 | | |
| 2636.24 | | | 37921.55 | 1 | | |
| 2636.51 | | | 37917.67 | 0 | | II |
| 2636.84 | | | 37912.92 | 1 | | IV |
| 2637.23 | | | 37907.31 | 0 | | III - IV |
| | 2638.55 | | 37888.35 | 1 | | |
| 2638.89 | | | 37883.47 | 0 | | III - IV |
| | 2639.15 | | 37879.74 | 1 | | III |
| | | 2640.16 | 37865.25 | 1 | A | III |
| | | 2640.54 | 37859.80 | 1 | | |
| 2641.13 | | | 37851.34 | 0 | | III |
| | | 2641.42 | 37847.18 | 2 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2642.38 | | 37833.44 | 0 | | |
| 2643.42 | | | 37818.55 | 0 | | III |
| 2643.63 | | | 37815.55 | 0 | | III |
| | 2643.80 | | 37811.83 | 0 | | |
| | | 2646.35 | 37776.68 | 1 | A | II |
| 2648.31 | | | 37748.72 | 0 | | |
| 2648.66 | | | 37743.74 | 0 | | |
| 2648.83 | | | 37741.32 | 1 | | II |
| | 2649.62 | | 37730.96 | 0 | | |
| | 2650.19 | | 37721.95 | 1 | | |
| | 2650.91 | | 37711.70 | 1 | | |
| 2651.58 | | | 37702.18 | 0 | | IV |
| 2652.17 | | | 37693.79 | 0 | | IV |
| 2652.80 | | | 37684.84 | 0 | | IV |
| | | 2653.34 | 37677.17 | 1 | | III |
| 2654.36 | | | 37662.69 | 0 | | IV |
| 2655.14 | | | 37651.63 | 0 | | |
| | 2655.44 | | 37647.38 | 0 | | |
| | 2657.01 | | 37625.13 | 0 | | |
| 2657.31 | | | 37620.88 | 0 | | III |
| 2658.27 | | | 37607.30 | 0 | | III |
| | 2659.36 | | 37591.88 | 1 | | |
| 2660.16 | | | 37580.58 | 0 | | II |
| | 2661.00 | | 37568.72 | 1 | | |
| 2661.90 | | | 37556.01 | 1 | | III |
| 2663.33 | | | 37535.85 | 1 | | |
| 2664.68 | | | 37516.83 | 0 | | III - IV |
| | | 2664.86 | 37514.30 | 0 | A | II - III |
| 2665.13 | | | 37510.50 | 0 | | IV |
| | | 2667.72 | 37474.09 | 1 | B | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2667.94 | | 37471.00 | 2 | B | |
| | 2668.00 | | 37470.15 | 1 | B | |
| 2668.23 | | | 37466.93 | 0 | | II |
| 2669.01 | | | 37455.98 | 0 | | |
| | 2670.25 | | 37438.58 | 1 | | |
| | 2670.68 | | 37432.56 | 0 | | |
| | 2670.79 | | 37431.01 | 1 | | |
| | 2672.21 | | 37411.13 | 1 | | |
| | | 2673.01 | 37399.93 | 1 | W | II |
| | 2673.78 | | 37389.16 | 0 | | |
| 2677.17 | | | 37341.81 | 0 | | |
| | 2678.55 | | 37322.58 | 1 | | |
| 2679.99 | | | 37302.53 | 0 | | IV |
| | | 2680.68 | 37292.93 | 1 | W | II |
| | 2681.10 | | 37287.08 | 0 | | II |
| | | 2682.74 | 37264.29 | 2 | W | |
| | 2683.72 | | 37250.68 | 0 | | |
| 2685.22 | | | 37229.88 | 2 | | III - IV |
| 2685.51 | | | 37225.86 | 1 | | III |
| 2685.64 | | | 37224.05 | 1 | | III |
| 2686.09 | | | 37217.82 | 1 | | II |
| 2686.92 | | | 37206.32 | 2 | | II - III |
| 2689.51 | | | 37177.49 | 0 | | IV |
| 2691.22 | | | 37146.88 | 0 | | IV |
| 2691.44 | | | 37143.84 | 2 | | II |
| 2691.59 | | | 37141.77 | 1 | | II |
| 2691.74 | | | 37139.70 | 4 | W | II |
| | 2694.12 | | 37106.89 | 0 | | |
| | 2695.10 | | 37093.40 | 0 | | II |
| 2695.42 | | | 37089.00 | 1 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | 2695.65 | | 37085.83 | 0 | | |
| 2695.87 | | | 37082.81 | 1 | | IV |
| 2696.25 | | | 37077.59 | 0 | | II - III |
| 2696.44 | | | 37074.97 | 1 | B | |
| 2696.51 | | | 37074.01 | 0 | B | |
| | | 2697.86 | 37069.29 | 1 | V | III |
| 2697.51 | | | 37060.26 | 2 | | IV |
| 2698.14 | | | 37051.61 | 1 | | IV |
| | | 2698.39 | 37048.18 | 0 | | II - III |
| | 2699.13 | | 37037.20 | 0 | | |
| 2699.50 | | | 37032.05 | 0 | | IV |
| 2699.99 | | | 37026.36 | 2 | | II |
| 2701.34 | | | 37011.83 | 1 | | IV |
| 2701.50 | | | 37005.53 | 0 | | III - IV |
| 2701.71 | | | 37002.66 | 0 | | III - IV |
| 2701.97 | | | 36999.10 | 2 | A | IV |
| 2702.31 | | | 36994.44 | 2 | | II - III |
| 2703.27 | | | 36981.30 | 2 | | |
| 2703.40 | | | 36979.52 | 1 | | |
| 2703.97 | | | 36971.72 | 1 | | IV |
| 2704.41 | | | 36965.71 | 0 | | III - IV |
| 2704.86 | | | 36959.56 | 1 | | II |
| 2705.38 | | | 36952.46 | 0 | | |
| 2706.08 | | | 36942.99 | 0 | | |
| 2706.72 | | | 36934.03 | 1 | | IV |
| 2706.92 | | | 36931.44 | 1 | | III |
| 2707.20 | | | 36927.62 | 1 | | II - III |
| 2707.36 | | | 36925.44 | 1 | | |
| 2708.45 | | | 36912.58 | 1 | | III |
| 2709.34 | | | 36898.45 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2709.57 | 36895.32 | 2 | W | |
| 2709.97 | | | 36889.88 | 0 | | III - IV |
| 2710.13 | | | 36887.70 | 1 | | III - IV |
| 2710.94 | | | 36876.68 | 1 | | II - III |
| | 2711.34 | | 36871.24 | 0 | | |
| 2711.45 | | | 36869.74 | 1 | | II - III |
| 2711.90 | | | 36863.62 | 1 | | IV |
| 2712.03 | | | 36861.86 | 1 | | IV |
| | | 2712.17 | 36859.95 | 1 | | II - III |
| 2712.57 | | | 36854.52 | 0 | A | |
| 2712.67 | | | 36853.16 | 0 | | |
| 2713.03 | | | 36848.27 | 1 | | |
| 2713.21 | | | 36845.83 | 2 | | III - IV |
| 2713.39 | | | 36843.38 | 2 | A | III - IV |
| | | 2713.60 | 36840.53 | 1 | H | |
| | 2714.05 | | 36834.42 | 0 | | |
| 2714.72 | | | 36825.33 | 2 | A | II - III |
| 2714.90 | | | 36822.89 | 1 | | III |
| 2715.59 | | | 36813.54 | 2 | | II - III |
| 2715.72 | | | 36811.77 | 0 | | |
| 2716.43 | | | 36802.15 | 1 | | III - IV |
| 2717.20 | | | 36791.73 | 3 | B | |
| 2717.29 | | | 36790.51 | 3 | B | II |
| | | 2718.10 | 36779.54 | 1 | | |
| 2718.71 | | | 36771.29 | 0 | | |
| 2719.08 | | | 36766.29 | 0 | | |
| 2719.19 | | | 36764.80 | 0 | | |
| 2720.22 | | | 36750.38 | 0 | | |
| | | 2721.20 | 36736.84 | 1 | | II |
| 2721.69 | | | 36731.17 | 2 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2721.92 | | | 36728.21 | 0 | | IV |
| 2722.55 | | | 36719.43 | 0 | | IV |
| 2722.90 | | | 36714.71 | 0 | | III - IV |
| 2723.37 | | | 36708.37 | 1 | A | II |
| 2725.27 | | | 36682.78 | 2 | | IV |
| 2725.42 | | | 36680.63 | 0 | | |
| | | 2725.69 | 36677.13 | 0 | W | II - III |
| 2726.15 | | | 36670.94 | 1 | | |
| 2727.20 | | | 36656.83 | 1 | B | |
| 2727.24 | | | 36656.29 | 0 | B | III |
| | | | | | | III |
| 2728.20 | | | 36643.39 | 1 | | |
| 2728.56 | | | 36638.55 | 0 | | |
| 2729.36 | | | 36627.82 | 0 | | |
| 2729.88 | | | 36620.84 | 1 | | |
| 2731.43 | | | 36600.06 | 1 | B | |
| | | | | | B | |
| 2731.48 | | | 36598.39 | 1 | B | |
| 2731.76 | | | 36595.64 | 1 | | |
| 2732.53 | | | 36585.33 | 1 | | III |
| 2733.16 | | | 36576.89 | 1 | | II |
| 2733.25 | | | 36575.69 | 0 | | |
| | | | | | | II - III |
| 2733.52 | | | 36572.08 | 0 | | |
| 2733.92 | | | 36566.73 | 2 | | IV |
| 2734.13 | | | 36563.92 | 1 | | |
| 2734.49 | | | 36559.11 | 1 | | |
| 2736.61 | | | 36530.78 | 1 | | III |
| | | | | | | III |
| 2736.99 | | | 36525.71 | 1 | | |
| 2737.26 | | | 36520.78 | 1 | | III - IV |
| 2737.51 | | | 36518.78 | 0 | | |
| 2739.19 | | | 36496.38 | 0 | | |
| 2739.35 | | | 36494.25 | 2 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2739.77 | | | 36488.65 | 0 | | II |
| 2740.00 | | | 36485.59 | 1 | | III |
| 2740.23 | | | 36482.53 | 0 | | II |
| 2740.78 | | | 36475.21 | 2 | | III |
| 2741.33 | | | 36467.89 | 0 | | II - III |
| 2742.14 | | | 36457.12 | 0 | | |
| | | 2742.55 | 36451.67 | 2 | | |
| | | 2743.12 | 36444.09 | 2 | A | |
| 2743.55 | | | 36438.38 | 1 | | III - IV |
| 2744.08 | | | 36431.34 | 2 | | IV |
| | 2745.26 | | 36415.69 | 0 | | |
| | | 2745.95 | 36406.54 | 2 | | |
| 2746.11 | | | 36404.41 | 1 | | |
| 2746.41 | | | 36400.44 | 0 | | |
| 2746.52 | | | 36398.98 | 0 | | |
| | | 2746.71 | 36386.46 | 0 | | II - III |
| 2746.82 | | | 36395.01 | 0 | A | |
| 2747.20 | | | 36349.97 | 1 | | |
| | | 2747.66 | 36343.88 | 0 | | II |
| 2747.86 | | | 36331.23 | 2 | | III |
| | | 2748.81 | 36368.66 | 0 | A | II |
| 2750.90 | | | 36341.03 | 0 | | III - IV |
| 2751.58 | | | 36332.05 | 1 | | |
| | | 2751.76 | 36329.67 | 0 | | |
| 2752.21 | | | 36323.73 | 1 | | |
| 2753.06 | | | 36312.52 | 1 | | |
| 2754.65 | | | 36291.56 | 2 | | III |
| 2754.88 | | | 36288.53 | 1 | | III |
| 2755.26 | | | 36283.53 | 1 | | III - IV |
| | | 2756.50 | 36267.21 | 1 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2756.90 | | | 36261.94 | 0 | | |
| 2757.04 | | | 36260.10 | 0 | | |
| 2757.33 | | | 36256.29 | 1 | | |
| | 2757.56 | | 36253.26 | 0 | | |
| 2757.83 | | | 36249.71 | 0 | | III |
| | | | 36248.40 | 0 | | III |
| 2757.93 | | | 36231.85 | 1 | | III |
| 2759.19 | | | 36225.68 | 1 | | IV |
| 2759.66 | | | 36223.05 | 0 | | |
| 2759.86 | | | 36211.77 | 1 | | III |
| 2761.72 | | | 36205.48 | 0 | | |
| 2761.20 | | | 36203.51 | 1 | A | III - IV |
| 2761.35 | | | 36200.49 | 2 | | III |
| 2761.58 | | | 36196.95 | 0 | | III |
| 2761.85 | | | 36191.71 | 0 | | |
| 2762.25 | | | 36185.43 | 1 | | III |
| 2762.73 | | | 36181.76 | 0 | | III |
| 2763.01 | | | 36171.55 | 1 | | III |
| 2763.75 | | | 36150.88 | 0 | | |
| 2765.37 | | | 36143.30 | 0 | | III |
| 2765.95 | | | 36140.30 | 1 | | III |
| 2766.18 | | | 36129.20 | 1 | | |
| 2767.03 | | | 36122.02 | 2 | | IV |
| 2767.58 | | | 36119.15 | 2 | | IV |
| 2767.80 | | | 36105.45 | 0 | | |
| 2768.85 | | | 36101.28 | 1 | | III |
| 2769.17 | | | 36092.67 | 1 | | IV |
| 2769.83 | | | 36085.77 | 1 | | IV |
| 2770.36 | | | 36084.99 | 0 | B | II |
| 2770.42 | | | 36070.80 | 2 | | IV |
| 2771.51 | | | | | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2771.96 | | | 36064.94 | 0 | | II - III |
| 2772.40 | | | 36059.22 | 2 | | III |
| 2773.00 | | | 36051.42 | 0 | | |
| 2773.52 | | | 36044.66 | 1 | | III |
| 2773.85 | | | 36040.37 | 1 | | III |
| 2774.44 | | | 36032.71 | 0 | | III |
| 2774.79 | | | 36028.16 | 0 | B | |
| 2774.86 | | | 36027.25 | 0 | B | II |
| 2776.96 | | | 36000.01 | 1 | | II - III |
| 2777.44 | | | 35993.79 | 1 | | |
| 2777.64 | | | 35991.20 | 0 | | |
| 2777.94 | | | 35987.31 | 1 | | III |
| 2779.64 | | | 35965.30 | 1 | | III |
| 2779.82 | | | 35962.97 | 0 | | III |
| 2780.10 | | | 35959.35 | 1 | | |
| 2781.69 | | | 35951.72 | 1 | | III |
| 2781.92 | | | 35935.83 | 0 | | II |
| 2782.30 | | | 35930.92 | 0 | | III - IV |
| 2782.69 | | | 35925.89 | 1 | | III |
| 2783.33 | | | 35917.62 | 2 | | III |
| | | 2783.75 | 35912.21 | 1 | W | II |
| 2784.34 | | | 35904.59 | 0 | | III |
| 2784.93 | | | 35896.99 | 0 | | III |
| | | 2785.05 | 35895.44 | 1 | A | II |
| 2785.33 | | | 35891.83 | 0 | | |
| 2785.43 | | | 35890.55 | 0 | | II |
| 2785.80 | | | 35885.78 | 1 | | III |
| 2786.51 | | | 35876.64 | 1 | | II - III |
| 2786.67 | | | 35874.58 | 1 | | II |
| 2786.89 | | | 35871.74 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2787.51 | | | 35863.77 | 2 | | IV |
| 2789.49 | | | 35838.31 | 0 | | |
| | | 2789.76 | 35834.84 | 0 | H | III |
| 2790.29 | | | 35828.04 | 0 | | |
| 2792.25 | | | 35802.89 | 2 | | |
| | | | 35800.07 | 0 | | IV |
| 2792.47 | | | 35793.66 | 0 | | |
| 2792.97 | | | 35790.97 | 0 | | |
| 2793.18 | | | 35772.02 | 1 | H | II |
| | | 2794.66 | 35769.71 | 2 | | III |
| 2794.84 | | | 35763.06 | 0 | | III |
| 2795.36 | | | 35752.70 | 2 | | IV |
| 2796.17 | | | 35748.74 | 2 | H | II |
| | | 2796.48 | 35747.46 | 2 | | III |
| 2796.58 | | | 35740.56 | 2 | | III |
| 2797.12 | | | 35735.83 | 1 | | II |
| 2797.49 | | | 35734.42 | 4 | A | II |
| | | 2797.60 | 35730.98 | 1 | | III |
| 2797.87 | | | 35728.92 | 1 | | |
| 2798.03 | | | 35725.87 | 0 | | IV |
| 2798.27 | | | 35721.91 | 1 | | |
| 2798.58 | | | 35706.73 | 1 | W | III |
| | | 2799.77 | 35701.25 | 2 | | III |
| 2800.20 | | | 35699.33 | 0 | | |
| 2800.35 | | | 35692.83 | 0 | | IV |
| 2800.86 | | | 35681.88 | 0 | | IV |
| 2801.72 | | | 35675.90 | 0 | | |
| 2802.19 | | | 35670.67 | 0 | | |
| 2802.60 | | | 35665.97 | 1 | | III |
| 2802.97 | | | 35659.73 | 0 | | IV |
| 2803.46 | | | | | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2804.63 | | | 35644.86 | 1 | | III |
| 2805.09 | | | 35639.01 | 1 | | III |
| 2805.61 | | | 35632.41 | 1 | | II |
| 2805.82 | | | 35629.61 | 1 | | |
| 2806.24 | | | 35624.41 | 1 | | III |
| 2806.40 | | | 35622.38 | 1 | | III |
| 2806.65 | | | 35619.20 | 2 | | IV |
| 2807.22 | | | 35611.97 | 2 | | III |
| | | 2807.50 | 35608.42 | 3 | H | II |
| 2809.46 | | | 35596.25 | 1 | | III |
| 2809.57 | | | 35594.86 | 1 | | II - III |
| 2809.95 | | | 35590.74 | 0 | | |
| 2809.06 | | | 35588.65 | 2 | A | III |
| 2809.33 | | | 35585.23 | 1 | | III - IV |
| 2809.53 | | | 35582.69 | 0 | | III |
| 2810.46 | | | 35570.92 | 2 | A | III |
| 2811.49 | | | 35557.89 | 0 | | |
| 2811.61 | | | 35556.37 | 1 | | III |
| 2812.06 | | | 35550.68 | 0 | | |
| 2813.60 | | | 35531.22 | 1 | | |
| 2813.81 | | | 35528.57 | 2 | | IV |
| 2814.31 | | | 35522.26 | 1 | | II - III |
| 2814.40 | | | 35521.13 | 1 | B | III |
| 2814.46 | | | 35520.37 | 2 | B | II - III |
| 2815.27 | | | 35510.15 | 0 | | II - III |
| 2815.92 | | | 35501.95 | 2 | | III |
| 2817.36 | | | 35483.81 | 2 | A | III |
| | | 2819.05 | 35462.54 | 1 | A | III |
| 2819.71 | | | 35454.24 | 3 | | IV |
| 2819.84 | | | 35452.60 | 0 | B | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | | 35449.71 | 2 | | II |
| 2822.18 | | | 35423.21 | 0 | | III - IV |
| 2822.52 | | | 35418.94 | 3 | | III - IV |
| 2823.21 | | | 35410.29 | 1 | | |
| 2824.10 | | | 35399.13 | 2 | | III - IV |
| 2825.11 | | | 35386.47 | 0 | | |
| 2825.22 | | | 35385.09 | 0 | | III |
| 2825.42 | | | 35382.59 | 0 | | II |
| 2825.99 | | | 35375.45 | 2 | | III |
| 2826.83 | | | 35364.94 | 1 | | II |
| 2827.46 | | | 35357.06 | 3 | | II - III |
| 2827.74 | | | 35353.56 | 0 | | III |
| 2827.93 | | | 35351.19 | 0 | | II |
| 2828.16 | | | 35348.31 | 0 | | III |
| 2828.31 | | | 35346.44 | 0 | | IV |
| | | 2828.70 | 35341.56 | 1 | | II |
| 2828.86 | | | 35339.56 | 0 | | II |
| 2829.19 | | | 35335.44 | 1 | | III |
| 2829.60 | | | 35330.32 | 0 | | |
| | | 2830.08 | 35324.33 | 1 | H | II |
| 2830.20 | | | 35322.83 | 0 | | II |
| | | 2830.90 | 35314.10 | 1 | W | II |
| 2831.30 | | | 35309.11 | 1 | | |
| | | 2832.05 | 35299.76 | 1 | | II |
| | | 2832.49 | 35294.28 | 2 | | II |
| 2832.83 | | | 35290.04 | 0 | | III |
| 2832.97 | | | 35288.30 | 1 | | III |
| 2833.12 | | | 35286.43 | 1 | | III |
| 2835.83 | | | 35252.71 | 0 | | IV |
| 2835.91 | | | 35251.72 | 0 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 2836.17 | 35248.49 | 0 | | II |
| 2838.47 | | | 35219.92 | 3 | | IV |
| 2839.81 | | | 35215.71 | 1 | | III |
| 2839.60 | | | 35205.91 | 2 | | III |
| 2840.64 | | | 35193.02 | 0 | | |
| | | 2841.77 | 35179.03 | 2 | A | II |
| 2843.75 | | | 35154.53 | 0 | | |
| 2844.12 | | | 35149.96 | 0 | | |
| 2844.46 | | | 35145.76 | 1 | B | II |
| 2844.81 | | | 35141.44 | 0 | W | III |
| 2845.06 | | | 35138.35 | 2 | | III |
| 2845.90 | | | 35127.98 | 1 | B | II |
| 2846.34 | | | 35122.55 | 0 | | |
| | | 2846.46 | 35121.07 | 3 | W | II |
| 2847.67 | | | 35106.15 | 3 | | III |
| 2847.92 | | | 35103.06 | 0 | | |
| 2848.43 | | | 35096.78 | 2 | | IV |
| 2849.72 | | | 35082.12 | 1 | | II - III |
| 2850.27 | | | 35074.12 | 0 | | III |
| 2850.50 | | | 35071.29 | 1 | | III |
| 2851.96 | | | 35065.63 | 0 | | II |
| 2852.40 | | | 35047.93 | 0 | | II |
| | | 2853.10 | 35039.33 | 1 | A | II |
| 2853.61 | | | 35033.07 | 0 | | III |
| 2853.68 | | | 35032.21 | 0 | | |
| 2854.55 | | | 35021.54 | 1 | B | II |
| 2854.60 | | | 35020.92 | 1 | B | II |
| 2855.73 | | | 35007.07 | 0 | | III - IV |
| 2855.80 | | | 35006.21 | 0 | | III - IV |
| 2856.67 | | | 34995.55 | 0 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2857.18 | | | 34999.30 | 0 | P | |
| 2857.26 | | | 34988.32 | 0 | | |
| 2861.97 | | | 34931.35 | 1 | | II |
| 2862.42 | | | 34925.75 | 3 | | III |
| 2862.55 | | | 34923.67 | 0 | | III |
| 2862.71 | | | 34921.71 | 1 | | |
| 2863.86 | | | 34907.69 | 0 | | III |
| 2864.15 | | | 34904.16 | 2 | | III |
| 2864.62 | | | 34998.43 | 1 | | III |
| 2864.78 | | | 34896.48 | 2 | | II |
| 2866.51 | | | 34875.42 | 0 | | III |
| 2866.66 | | | 34873.60 | 0 | | |
| 2866.83 | | | 34871.53 | 1 | A | II |
| 2867.30 | | | 34865.81 | 1 | | II |
| 2868.45 | | | 34851.84 | 0 | | III |
| 2869.52 | | | 34838.84 | 0 | A | II |
| 2869.95 | | | 34833.62 | 1 | | IV |
| 2871.10 | | | 34819.67 | 2 | | III |
| 2871.27 | | | 34817.61 | 2 | | II - III |
| 2871.69 | | | 34812.52 | 2 | | III |
| 2872.75 | | | 34799.67 | 0 | | III |
| 2873.00 | | | 34796.64 | 1 | | |
| 2873.29 | | | 34793.13 | 0 | | III - IV |
| 2873.51 | | | 34790.47 | 2 | | III - IV |
| 2875.15 | | | 34770.63 | 2 | | IV |
| | | 2877.14 | 34746.58 | 1 | H | II - III |
| 2877.67 | | | 34740.18 | 0 | | III |
| | | 2878.52 | 34729.92 | 1 | H | II |
| 2879.36 | | | 34719.79 | 1 | | III |
| 2879.79 | | | 34714.60 | 2 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2881.86 | | | 34711.71 | 0 | | |
| 2881.57 | | | 34693.16 | 0 | | |
| 2883.71 | | | 34667.42 | 1 | | II |
| 2886.68 | | | 34631.75 | 2 | | III |
| 2886.93 | | | 34628.75 | 0 | | II - III |
| 2887.13 | | | 34626.35 | 1 | | II |
| 2888.59 | | | 34608.85 | 1 | | IV |
| 2889.08 | | | 34602.98 | 1 | | II |
| 2889.97 | | | 34592.33 | 2 | | III |
| 2891.12 | | | 34578.57 | 0 | | IV |
| 2891.72 | | | 34571.39 | 2 | | III |
| 2895.04 | | | 34531.75 | 1 | | III |
| 2895.27 | | | 34529.00 | 1 | | II |
| 2896.37 | | | 34519.47 | 0 | | III - IV |
| 2896.53 | | | 34513.99 | 0 | | III |
| 2896.65 | | | 34512.56 | 2 | | III |
| 2897.70 | | | 34500.05 | 0 | | III |
| 2897.99 | | | 34496.60 | 0 | | III |
| 2898.48 | | | 34490.77 | 1 | | IV |
| 2898.87 | | | 34486.13 | 0 | | |
| 2900.44 | | | 34467.46 | 3 | | IV |
| 2902.29 | | | 34445.49 | 1 | | III |
| 2902.70 | | | 34440.63 | 0 | | II |
| 2904.17 | | | 34423.19 | 1 | | II - III |
| 2905.04 | | | 34412.88 | 0 | | II |
| 2905.59 | | | 34406.37 | 1 | | IV |
| 2906.21 | | | 34399.03 | 0 | | |
| 2906.41 | | | 34396.67 | 0 | | |
| 2906.56 | | | 34394.89 | 3 | | II |
| 2907.20 | | | 34387.32 | 1 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2907.87 | | | 34379.39 | 0 | | |
| 2909.07 | | | 34365.21 | 2 | | IV |
| 2909.62 | | | 34358.72 | 0 | | IV |
| 2910.09 | | | 34353.17 | 0 | | III - IV |
| 2910.24 | | | 34351.40 | 0 | | II |
| 2910.37 | | | 34349.86 | 2 | | IV |
| | | 2910.63 | 34346.80 | 0 | W | II |
| 2911.48 | | | 34336.77 | 1 | | III |
| 2911.91 | | | 34331.79 | 3 | | III |
| 2912.38 | | | 34326.16 | 3 | | III |
| 2913.54 | | | 34312.40 | 0 | | |
| 2914.14 | | | 34305.43 | 2 | | III |
| 2915.04 | | | 34294.84 | 1 | | III |
| 2916.63 | | | 34276.14 | 1 | | III |
| 2917.60 | | | 34264.75 | 2 | | III |
| 2918.52 | | | 34253.95 | 0 | | III - IV |
| 2919.90 | | | 34237.76 | 1 | | II |
| 2923.53 | | | 34195.25 | 2 | | III |
| 2923.96 | | | 34190.22 | 1 | | II - III |
| 2924.40 | | | 34185.08 | 0 | | II |
| 2926.07 | | | 34165.57 | 1 | | III |
| 2927.13 | | | 34153.20 | 0 | | II - III |
| 2927.64 | | | 34147.25 | 2 | | |
| 2928.73 | | | 34134.54 | 0 | | II - III |
| 2929.25 | | | 34129.40 | 2 | | III |
| | | 2929.73 | 34122.89 | 1 | H | II - III |
| 2930.27 | | | 34116.60 | 3 | | III |
| 2932.09 | | | 34095.42 | 2 | B | III |
| 2932.76 | | | 34087.63 | 2 | | III |
| | | 2933.37 | 34080.54 | 1 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2933.50 | | | 34079.04 | 0 | | II - III |
| 2934.86 | | | 34063.24 | 0 | | II - III |
| 2935.72 | | | 34053.27 | 1 | | III |
| 2935.86 | | | 34051.64 | 2 | | II |
| 2936.86 | | | 34040.05 | 1 | | III - IV |
| 2937.57 | | | 34031.82 | 3 | | IV |
| 2939.11 | | | 34013.99 | 1 | | III |
| 2939.73 | | | 34006.82 | 1 | | III |
| 2940.21 | | | 34001.27 | 2 | | III |
| 2941.39 | | | 33987.63 | 1 | | III |
| 2942.06 | | | 33979.89 | 1 | | III |
| 2942.23 | | | 33977.92 | 0 | | |
| 2943.42 | | | 33964.07 | 1 | | II - III |
| 2944.56 | | | 33951.04 | 1 | | III |
| 2944.68 | | | 33949.66 | 2 | | III - IV |
| 2945.23 | | | 33943.32 | 3 | | III |
| 2945.48 | | | 33940.43 | 1 | | III |
| 2946.36 | | | 33930.30 | 2 | | III - IV |
| 2946.51 | | | 33928.57 | 0 | | |
| 2947.51 | | | 33917.06 | 3 | | III |
| 2948.07 | | | 33910.62 | 3 | | II - III |
| 2949.63 | | | 33892.68 | 0 | | II - III |
| 2950.76 | | | 33879.70 | 1 | | II |
| 2951.53 | | | 33870.87 | 0 | | |
| | | 2952.46 | 33860.20 | 2 | | II |
| 2952.61 | | | 33858.48 | 1 | | IV |
| 2953.86 | | | 33844.15 | 0 | | III |
| 2953.94 | | | 33843.23 | 1 | | III |
| 2954.10 | | | 33841.40 | 1 | B | III |
| 2954.17 | | | 33840.60 | 1 | B | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2954.41 | | | 33937.95 | 1 | | II |
| 2954.69 | | | 33934.64 | 3 | | III |
| 2954.93 | | | 33931.90 | 4 | | III |
| 2955.40 | | | 33926.52 | 2 | | |
| | | 2955.71 | 33922.97 | 0 | H | III |
| 2955.89 | | | 33920.91 | 2 | | III - IV |
| 2956.11 | | | 33918.39 | 3 | | |
| 2957.58 | | | 33901.58 | 2 | | III |
| | | 2957.79 | 33799.19 | 0 | B | III |
| 2958.50 | | | 33791.07 | 0 | | |
| 2958.72 | | | 33788.56 | 2 | | III - IV |
| 2959.84 | | | 33787.19 | 1 | | |
| 2959.28 | | | 33782.17 | 1 | R | |
| 2959.36 | | | 33781.25 | 2 | R | III |
| 2959.69 | | | 33777.49 | 1 | | |
| 2960.07 | | | 33773.15 | 1 | | III |
| 2960.34 | | | 33770.07 | 2 | | III |
| 2960.71 | | | 33765.85 | 1 | | III |
| 2961.87 | | | 33764.03 | 0 | | III |
| 2961.54 | | | 33756.39 | 3 | | IV |
| 2963.45 | | | 33734.63 | 1 | | II |
| 2964.17 | | | 33726.44 | 2 | | III |
| 2964.80 | | | 33719.27 | 1 | | III |
| 2964.93 | | | 33717.79 | 1 | | III |
| | | 2966.72 | 33697.45 | 1 | | II |
| 2966.92 | | | 33695.18 | 1 | A | III |
| 2967.12 | | | 33692.91 | 2 | | III - IV |
| 2968.43 | | | 33678.04 | 1 | | III |
| 2968.57 | | | 33676.45 | 1 | | III |
| 2968.94 | | | 33672.26 | 0 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2969.25 | | | 33668.74 | 4 | | III |
| 2969.43 | | | 33666.70 | 1 | | III |
| 2969.77 | | | 33662.84 | 4 | | II - III |
| 2970.08 | | | 33659.33 | 1 | | III |
| 2970.49 | | | 33654.69 | 4 | | III |
| 2970.94 | | | 33649.59 | 4 | | III - IV |
| 2971.17 | | | 33646.98 | 1 | | III |
| 2971.26 | | | 33645.96 | 1 | | III |
| 2971.53 | | | 33642.91 | 3 | Δ | |
| 2971.72 | | | 33640.76 | 1 | | |
| 2971.95 | | | 33638.15 | 0 | | |
| 2972.22 | | | 33635.10 | 0 | | |
| 2972.32 | | | 33633.97 | 1 | | II |
| | | 2972.76 | 33628.99 | 1 | | II |
| 2973.10 | | | 33625.14 | 0 | | |
| | | 2973.21 | 33623.90 | 0 | | |
| 2973.47 | | | 33620.96 | 1 | | II - III |
| 2974.41 | | | 33610.33 | 0 | | |
| 2974.70 | | | 33607.06 | 1 | | II |
| 2974.90 | | | 33604.80 | 1 | | II - III |
| 2975.21 | | | 33601.30 | 0 | | |
| 2975.61 | | | 33596.78 | 0 | | |
| 2976.44 | | | 33587.41 | 5 | | III |
| 2976.75 | | | 33583.91 | 1 | | III |
| 2977.26 | | | 33578.16 | 0 | | |
| 2977.77 | | | 33572.41 | 1 | | II - III |
| 2977.99 | | | 33569.93 | 1 | | II |
| 2979.35 | | | 33554.61 | 3 | | II |
| 2980.09 | | | 33546.27 | 0 | | III |
| 2981.21 | | | 33533.67 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 2981.32 | | | 33532.44 | 1 | | III |
| 2982.22 | | | 33522.32 | 1 | | II |
| 2983.61 | | | 33506.70 | 1 | R | |
| 2983.78 | | | 33514.79 | 4 | | |
| 2984.37 | | | 33498.17 | 0 | | |
| 2984.58 | | | 33495.81 | 2 | | III |
| 2985.53 | | | 33485.15 | 2 | | III |
| 2986.11 | | | 33478.65 | 2 | | III |
| 2986.84 | | | 33470.47 | 1 | | II |
| 2987.66 | | | 33461.28 | 1 | | |
| 2990.33 | | | 33431.40 | 1 | | III |
| 2990.57 | | | 33429.72 | 1 | | II |
| 2991.82 | | | 33425.93 | 0 | | |
| 2991.25 | | | 33421.12 | 2 | | III |
| 2991.49 | | | 33418.44 | 2 | | III |
| 2991.71 | | | 33415.99 | 0 | | II |
| 2992.53 | | | 33406.83 | 1 | B | III |
| 2992.89 | | | 33402.81 | 2 | | III |
| 2992.99 | | | 33401.70 | 1 | | |
| 2994.37 | | | 33386.30 | 0 | | III |
| 2994.67 | | | 33382.96 | 1 | | III |
| 2994.95 | | | 33379.84 | 1 | | III |
| 2996.94 | | | 33357.67 | 0 | | III - IV |
| 2997.50 | | | 33351.44 | 1 | | III |
| 2998.94 | | | 33335.43 | 2 | B | III - IV |
| 2999.03 | | | 33334.42 | 1 | B | III |
| 2999.29 | | | 33331.54 | 1 | | III |
| 3000.01 | | | 33323.54 | 1 | | IV |
| 3001.25 | | | 33309.77 | 0 | | |
| 3001.52 | | | 33306.77 | 1 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3001.81 | | | 33303.56 | 1 | | III |
| | | 3003.12 | 33289.03 | 1 | | |
| 3004.01 | | | 33279.17 | 1 | | II |
| 3004.26 | | | 33276.40 | 3 | A | III |
| 3004.65 | | | 33272.08 | 1 | | III |
| 3004.95 | | | 33268.76 | 1 | | IV |
| 3005.94 | | | 33257.80 | 0 | | |
| | | 3007.02 | 33245.86 | 0 | | |
| 3008.96 | | | 33224.42 | 1 | | III |
| 3009.03 | | | 33223.65 | 0 | B | |
| 3010.66 | | | 33205.66 | 1 | | III |
| 3013.17 | | | 33178.01 | 0 | | III - IV |
| 3013.36 | | | 33175.91 | 0 | | III |
| | | 3013.84 | 33170.63 | 1 | | II |
| 3014.02 | | | 33168.65 | 1 | B | IV |
| 3014.13 | | | 33167.44 | 3 | B | III |
| 3014.56 | | | 33162.38 | 1 | | III |
| 3015.09 | | | 33156.88 | 3 | | IV |
| 3015.41 | | | 33153.36 | 1 | | III |
| 3015.59 | | | 33151.38 | 0 | | II |
| 3015.77 | | | 33149.40 | 0 | | III |
| 3016.42 | | | 33142.15 | 1 | | |
| 3017.02 | | | 33135.67 | 1 | | |
| 3017.48 | | | 33130.62 | 1 | | II |
| 3017.62 | | | 33129.08 | 0 | B | |
| 3017.72 | | | 33127.98 | 2 | A | III |
| 3018.91 | | | 33116.02 | 1 | | |
| | | 3019.81 | 33105.05 | 2 | | II |
| 3020.33 | | | 33099.35 | 1 | | II |
| 3020.52 | | | 33097.27 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3021.77 | | | 33083.59 | 1 | | |
| | | 3022.06 | 33080.41 | 2 | | II |
| 3022.34 | | | 33077.34 | 2 | | II |
| 3023.65 | | | 33063.01 | 2 | | III |
| 3023.83 | | | 33061.04 | 3 | | III |
| | | 3024.19 | 33057.11 | 1 | | II |
| 3024.43 | | | 33054.49 | 2 | | III |
| 3024.86 | | | 33049.79 | 1 | | IV |
| 3026.52 | | | 33031.66 | 1 | | III |
| 3027.29 | | | 33023.26 | 0 | | II |
| 3027.61 | | | 33019.77 | 0 | | II |
| 3027.81 | | | 33017.59 | 0 | | IV |
| 3029.74 | | | 32996.56 | 1 | | III |
| 3031.95 | | | 32973.59 | 0 | | |
| 3033.06 | | | 32960.44 | 1 | | III |
| 3033.77 | | | 32952.73 | 1 | | II |
| 3034.22 | | | 32947.84 | 4 | | III |
| 3036.85 | | | 32919.31 | 0 | | II |
| 3036.97 | | | 32918.01 | 3 | A | III - IV |
| 3037.28 | | | 32914.65 | 0 | | II |
| 3038.77 | | | 32998.51 | 1 | | IV |
| 3041.69 | | | 32866.93 | 0 | | IV |
| 3042.04 | | | 32863.15 | 1 | | III |
| 3042.67 | | | 32856.34 | 0 | | IV |
| 3044.26 | | | 32839.18 | 4 | | III |
| 3044.76 | | | 32833.79 | 1 | | II |
| 3045.29 | | | 32828.08 | 1 | | II |
| 3046.28 | | | 32817.41 | 1 | | II |
| 3047.56 | | | 32803.62 | 0 | | II - III |
| 3047.83 | | | 32800.72 | 0 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3048.12 | | | 32797.49 | 1 | | III |
| | | 3048.49 | 32793.62 | 1 | | II |
| 3048.86 | | | 32789.64 | 1 | | III |
| 3049.10 | | | 32787.06 | 0 | | II - III |
| | | 3049.23 | 32785.66 | 1 | H | II |
| | | 3049.72 | 32780.39 | 0 | H | II |
| | | 3050.98 | 32766.85 | 2 | | II |
| 3051.21 | | | 32764.39 | 0 | | III |
| 3054.48 | | | 32729.31 | 2 | | III |
| 3055.00 | | | 32723.74 | 1 | | III - IV |
| 3055.26 | | | 32720.95 | 1 | | III |
| 3055.50 | | | 32718.38 | 1 | | |
| 3056.51 | | | 32707.57 | 1 | | II |
| 3059.52 | | | 32675.40 | 0 | | IV |
| 3060.82 | | | 32661.41 | 0 | | III - IV |
| 3060.94 | | | 32660.24 | 0 | | |
| 3061.58 | | | 32653.41 | 0 | | II |
| 3061.64 | | | 32652.77 | 0 | | II |
| 3063.30 | | | 32635.08 | 1 | | III |
| 3063.43 | | | 32633.69 | 3 | | |
| | | 3063.53 | 32632.63 | 0 | | |
| 3063.72 | | | 32630.60 | 0 | | |
| 3064.72 | | | 32619.85 | 0 | | |
| 3065.19 | | | 32614.96 | 3 | | III |
| 3065.56 | | | 32611.02 | 0 | | II - III |
| | | 3066.56 | 32600.39 | 1 | | II |
| 3066.82 | | | 32597.62 | 1 | | IV |
| 3067.22 | | | 32593.37 | 1 | | II |
| 3067.32 | | | 32592.31 | 1 | | II |
| 3067.65 | | | 32588.80 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3067.76 | | | 32597.63 | 0 | | |
| 3067.92 | | | 32595.94 | 0 | | |
| 3068.11 | | | 32593.92 | 1 | | IV |
| 3068.57 | | | 32579.03 | 2 | | III |
| 3069.17 | | | 32572.66 | 0 | | |
| 3070.01 | | | 32563.75 | 1 | | III |
| 3070.54 | | | 32558.13 | 0 | | |
| 3071.31 | | | 32549.97 | 1 | | III |
| 3071.75 | | | 32545.31 | 1 | | IV |
| 3073.15 | | | 32530.06 | 0 | | II |
| 3073.41 | | | 32527.73 | 1 | | II |
| 3073.51 | | | 32526.67 | 1 | | III |
| 3074.37 | | | 32517.57 | 0 | | |
| 3074.48 | | | 32516.41 | 0 | | III - IV |
| 3075.31 | | | 32507.63 | 1 | | |
| 3076.16 | | | 32498.65 | 0 | | III - IV |
| 3076.86 | | | 32491.26 | 0 | | |
| 3077.71 | | | 32482.29 | 4 | | IV |
| 3078.57 | | | 32473.21 | 0 | | |
| 3078.87 | | | 32470.05 | 0 | | |
| 3079.72 | | | 32461.09 | 5 | W | III |
| 3080.42 | | | 32453.71 | 2 | | III |
| 3090.58 | | | 32452.02 | 0 | | |
| 3082.63 | | | 32430.45 | 1 | | II |
| 3082.89 | | | 32427.71 | 1 | | III |
| 3083.05 | | | 32426.03 | 2 | | IV |
| 3083.27 | | | 32423.71 | 0 | | III |
| 3083.53 | | | 32420.98 | 3 | | III |
| 3085.19 | | | 32403.54 | 0 | | III |
| 3086.70 | | | 32387.69 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3087.34 | | | 32380.97 | 0 | | III |
| 3088.87 | | | 32364.93 | 0 | | III |
| 3089.73 | | | 32355.92 | 1 | | III |
| 3089.85 | | | 32354.67 | 0 | | III |
| 3090.00 | | | 32353.10 | 2 | A | III |
| 3090.36 | | | 32349.33 | 0 | | II |
| | | 3090.42 | 32348.70 | 0 | B | II |
| 3090.86 | | | 32344.10 | 1 | | |
| 3091.05 | | | 32342.11 | 3 | | III |
| 3091.25 | | | 32338.97 | 0 | | III |
| 3092.42 | | | 32327.68 | 1 | | II |
| | | 3092.75 | 32324.33 | 0 | | II |
| 3094.34 | | | 32307.72 | 0 | | |
| 3094.57 | | | 32305.32 | 1 | | II |
| 3094.70 | | | 32303.96 | 1 | | III |
| 3095.24 | | | 32297.29 | 1 | | III |
| 3096.09 | | | 32289.46 | 1 | | III |
| 3096.38 | | | 32286.44 | 1 | | III |
| 3096.60 | | | 32284.14 | 0 | | IV |
| 3096.83 | | | 32281.74 | 0 | | |
| 3096.90 | | | 32281.02 | 0 | | II |
| 3097.52 | | | 32274.55 | 1 | | IV |
| 3097.69 | | | 32272.78 | 1 | | III - IV |
| 3098.13 | | | 32268.20 | 0 | H | |
| 3098.27 | | | 32266.74 | 0 | A | II |
| 3098.58 | | | 32263.51 | 1 | | III |
| | | 3099.10 | 32258.10 | 0 | A | II |
| 3099.32 | | | 32255.81 | 1 | | |
| 3099.41 | | | 32254.88 | 1 | | III |
| 3099.87 | | | 32250.19 | 2 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3101.23 | | | 32235.95 | 0 | | |
| 3101.57 | | | 32232.41 | 1 | | II |
| 3102.14 | | | 32226.49 | 1 | | III |
| 3102.36 | | | 32224.21 | 1 | | III |
| 3102.69 | | | 32220.78 | 2 | | III |
| 3103.23 | | | 32215.17 | 3 | | III |
| 3103.47 | | | 32212.68 | 2 | | III |
| 3103.82 | | | 32209.05 | 0 | | III |
| 3104.12 | | | 32205.94 | 0 | | III |
| 3104.44 | | | 32202.62 | 2 | | II |
| 3105.62 | | | 32190.38 | 3 | | III |
| 3105.88 | | | 32187.69 | 0 | | |
| 3106.02 | | | 32186.23 | 0 | | III |
| 3106.34 | | | 32182.92 | 2 | | III |
| 3106.47 | | | 32181.57 | 1 | | III |
| 3106.54 | | | 32180.85 | 0 | B | |
| 3107.45 | | | 32171.42 | 0 | | IV |
| 3107.56 | | | 32170.28 | 0 | | III |
| 3107.78 | | | 32168.91 | 1 | | II |
| 3108.50 | | | 32160.56 | 0 | | III |
| 3109.33 | | | 32151.97 | 0 | | III |
| 3109.45 | | | 32150.32 | 2 | | IV |
| 3110.23 | | | 32142.67 | 1 | | III |
| 3111.94 | | | 32125.01 | 0 | | |
| 3112.09 | | | 32123.46 | 0 | | III |
| 3112.18 | | | 32122.53 | 0 | | |
| 3112.58 | | | 32118.49 | 3 | | IV |
| 3112.75 | | | 32116.65 | 1 | | II |
| 3112.96 | | | 32114.48 | 1 | | III |
| 3113.36 | | | 32110.36 | 0 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3114.41 | | | 32099.53 | 2 | | III |
| 3114.77 | | | 32095.82 | 0 | | III |
| 3116.29 | | | 32080.17 | 0 | | |
| 3116.69 | | | 32076.05 | 0 | | |
| 3117.20 | | | 32070.80 | 0 | | III |
| 3117.61 | | | 32066.59 | 1 | | |
| 3117.76 | | | 32065.04 | 0 | | II - III |
| 3117.89 | | | 32063.71 | 0 | | |
| 3118.42 | | | 32058.26 | 1 | | III - IV |
| 3119.20 | | | 32050.24 | 3 | | IV |
| 3119.67 | | | 32045.41 | 0 | | III |
| 3120.52 | | | 32036.68 | 1 | | IV |
| 3121.01 | | | 32031.65 | 1 | | III |
| 3121.57 | | | 32025.91 | 2 | A | IV |
| 3121.89 | | | 32022.62 | 3 | | II |
| 3122.15 | | | 32019.96 | 2 | | III |
| 3122.54 | | | 32015.96 | 1 | | III |
| 3123.95 | | | 32001.51 | 0 | | III |
| 3124.06 | | | 32000.38 | 0 | | II |
| 3124.60 | | | 31994.85 | 0 | | III |
| 3124.95 | | | 31991.27 | 1 | | III |
| 3125.23 | | | 31988.40 | 0 | | |
| 3125.37 | | | 31986.97 | 0 | | |
| 3125.76 | | | 31982.98 | 3 | | III - IV |
| 3126.77 | | | 31972.65 | 0 | | III |
| 3127.68 | | | 31963.35 | 0 | | II - III |
| 3128.29 | | | 31957.21 | 0 | | III |
| 3129.34 | | | 31946.39 | 1 | | |
| 3130.28 | | | 31936.80 | 0 | | |
| 3130.39 | | | 31935.68 | 0 | A | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3130.57 | | | 31933.84 | 0 | | III |
| 3131.54 | | | 31923.95 | 1 | | II |
| 3131.83 | | | 31920.99 | 2 | | II |
| 3132.70 | | | 31912.12 | 0 | | IV |
| 3132.80 | | | 31911.11 | 2 | A | III |
| 3133.22 | | | 31906.83 | 0 | | |
| 3134.21 | | | 31896.75 | 1 | | |
| 3134.72 | | | 31891.56 | 3 | | III - IV |
| 3136.40 | | | 31874.48 | 0 | | |
| 3136.59 | | | 31872.55 | 0 | | |
| 3136.90 | | | 31869.40 | 0 | | |
| 3137.02 | | | 31868.18 | 3 | | IV |
| 3138.28 | | | 31855.39 | 4 | A | III |
| 3138.72 | | | 31850.92 | 2 | | III |
| 3139.17 | | | 31846.36 | 0 | | III |
| 3139.68 | | | 31841.19 | 1 | | |
| 3140.73 | | | 31830.54 | 0 | | |
| 3141.63 | | | 31821.42 | 2 | | III |
| 3141.91 | | | 31818.59 | 0 | A | |
| 3142.54 | | | 31812.21 | 0 | A | |
| 3142.87 | | | 31808.87 | 0 | | IV |
| 3143.02 | | | 31807.35 | 0 | | III |
| 3143.65 | | | 31801.98 | 0 | | II |
| 3143.80 | | | 31799.46 | 0 | | |
| | | 3144.20 | 31795.41 | 0 | | II |
| 3145.02 | | | 31787.12 | 2 | | II |
| 3145.57 | | | 31781.56 | 3 | | IV |
| 3147.46 | | | 31762.48 | 0 | | |
| 3148.70 | | | 31749.97 | 0 | | |
| 3149.01 | | | 31746.85 | 0 | B | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3149.11 | | | 31745.84 | 3 | A | IV |
| 3149.85 | | | 31738.38 | 0 | | |
| 3150.69 | | | 31729.92 | 2 | | III |
| 3150.83 | | | 31729.51 | 3 | | III |
| 3150.97 | | | 31727.10 | 3 | | II |
| 3151.93 | | | 31718.45 | 2 | | III |
| 3153.00 | | | 31706.67 | 2 | | III |
| 3153.44 | | | 31702.25 | 2 | | IV |
| 3154.18 | | | 31694.81 | 0 | | |
| 3154.51 | | | 31691.50 | 0 | | III |
| 3155.51 | | | 31681.46 | 2 | | III |
| 3156.67 | | | 31669.81 | 1 | | III |
| 3156.77 | | | 31668.81 | 1 | | IV |
| 3153.52 | | | 31651.26 | 0 | | III - IV |
| 3158.67 | | | 31649.76 | 0 | | III - IV |
| 3153.88 | | | 31647.66 | 0 | | III - IV |
| 3159.84 | | | 31638.04 | 0 | | II |
| 3160.66 | | | 31629.84 | 1 | | III |
| 3160.82 | | | 31628.23 | 0 | | |
| 3162.96 | | | 31606.84 | 1 | | II |
| 3164.26 | | | 31593.85 | 1 | | II |
| 3164.47 | | | 31591.75 | 2 | | III |
| 3164.82 | | | 31588.26 | 0 | | |
| 3165.29 | | | 31587.57 | 1 | | II |
| 3166.13 | | | 31575.19 | 1 | | IV |
| 3168.64 | | | 31550.18 | 0 | A | II |
| 3169.62 | | | 31540.43 | 0 | | |
| 3169.75 | | | 31539.13 | 1 | | III |
| 3170.66 | | | 31537.08 | 1 | | IV |
| 3172.34 | | | 31513.39 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3173.01 | | | 31506.72 | 0 | | IV |
| 3174.38 | | | 31493.13 | 0 | | |
| 3174.48 | | | 31492.14 | 0 | | |
| 3175.25 | | | 31484.50 | 5 | | III |
| 3175.65 | | | 31480.54 | 2 | | II |
| 3176.04 | | | 31476.67 | 3 | | IV |
| 3176.37 | | | 31473.40 | 0 | | |
| 3177.11 | | | 31466.07 | 1 | | III |
| 3177.67 | | | 31460.53 | 0 | | |
| 3177.87 | | | 31458.55 | 1 | | |
| 3179.27 | | | 31444.70 | 3 | | III |
| 3180.54 | | | 31432.14 | 2 | | IV |
| 3181.43 | | | 31423.35 | 0 | | II |
| 3182.96 | | | 31408.24 | 0 | A | |
| 3184.27 | | | 31395.32 | 2 | | III |
| 3184.58 | | | 31392.27 | 3 | | IV |
| 3185.21 | | | 31386.06 | 3 | | III |
| 3185.76 | | | 31380.64 | 0 | | III |
| 3186.77 | | | 31370.69 | 1 | | III |
| 3187.54 | | | 31363.17 | 3 | | IV |
| 3187.73 | | | 31361.25 | 1 | | |
| 3188.06 | | | 31358.00 | 0 | | |
| 3188.72 | | | 31351.51 | 2 | | IV |
| 3190.84 | | | 31330.68 | 1 | | |
| 3192.27 | | | 31316.65 | 0 | | |
| 3193.21 | | | 31307.43 | 2 | A | III |
| | | 3193.72 | 31302.43 | 1 | | III |
| 3194.44 | | | 31295.37 | 1 | | |
| 3194.85 | | | 31291.36 | 0 | | |
| 3195.03 | | | 31289.50 | 2 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3196.25 | | | 31277.65 | 3 | | II - III |
| 3196.51 | | | 31275.11 | 3 | | III |
| 3198.47 | | | 31255.94 | 1 | | |
| 3198.61 | | | 31254.58 | 3 | | III |
| 3199.22 | | | 31248.62 | 1 | | III |
| 3199.32 | | | 31247.64 | 1 | | IV |
| 3199.71 | | | 31243.83 | 1 | | III |
| 3201.55 | | | 31225.87 | 2 | | IV |
| 3201.74 | | | 31224.02 | 1 | | II |
| 3202.03 | | | 31221.19 | 1 | | II |
| 3202.66 | | | 31215.05 | 1 | | III |
| 3203.22 | | | 31209.60 | 1 | | |
| 3207.79 | | | 31165.13 | 2 | | IV |
| 3209.40 | | | 31149.50 | 3 | | IV |
| 3210.27 | | | 31141.06 | 2 | | IV |
| 3211.48 | | | 31129.33 | 0 | | |
| | | 3211.58 | 31128.36 | 1 | A | III |
| 3212.27 | | | 31121.67 | 0 | P | II - III |
| 3212.31 | | | 31121.28 | 0 | R | II |
| 3212.81 | | | 31116.44 | 1 | | II - III |
| 3213.21 | | | 31112.57 | 0 | | |
| 3214.12 | | | 31103.76 | 2 | | III |
| 3214.51 | | | 31099.99 | 1 | | IV |
| 3214.98 | | | 31095.44 | 0 | | |
| 3215.30 | | | 31092.34 | 0 | | |
| 3217.64 | | | 31069.74 | 0 | | |
| 3217.91 | | | 31067.13 | 0 | | |
| 3218.48 | | | 31061.63 | 1 | | |
| 3219.72 | | | 31049.66 | 0 | | |
| 3220.83 | | | 31038.96 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3221.04 | | | 31036.94 | 1 | | III |
| 3221.29 | | | 31034.53 | 1 | | IV |
| 3222.27 | | | 31025.09 | 0 | | |
| 3222.35 | | | 31024.32 | 0 | | |
| 3222.99 | | | 31018.16 | 1 | | III |
| 3223.36 | | | 31014.60 | 1 | | IV |
| 3223.75 | | | 31010.85 | 0 | | IV |
| 3223.82 | | | 31010.10 | 0 | | |
| 3225.09 | | | 30997.97 | 1 | | II |
| 3225.49 | | | 30994.12 | 2 | R | IV |
| 3225.55 | | | 30993.54 | 1 | R | IV |
| 3227.16 | | | 30978.09 | 2 | | III |
| 3227.53 | | | 30974.53 | 1 | A | IV |
| 3227.69 | | | 30973.00 | 1 | | IV |
| 3229.05 | | | 30959.05 | 0 | | II |
| 3229.51 | | | 30955.54 | 0 | | IV |
| 3230.04 | | | 30950.46 | 2 | | IV |
| 3231.37 | | | 30937.73 | 1 | | |
| 3231.70 | | | 30934.57 | 4 | W | III |
| 3233.28 | | | 30919.45 | 2 | | III |
| 3233.41 | | | 30918.21 | 1 | | III |
| 3234.54 | | | 30907.40 | 0 | | IV |
| 3235.34 | | | 30899.76 | 0 | | IV |
| 3235.73 | | | 30896.04 | 2 | | III |
| 3236.84 | | | 30895.45 | 3 | | III |
| 3237.36 | | | 30890.49 | 2 | | IV |
| 3238.54 | | | 30869.23 | 1 | | |
| 3238.65 | | | 30868.10 | 1 | | IV |
| 3239.30 | | | 30861.99 | 5 | | III |
| 3239.58 | | | 30859.32 | 3 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3240.47 | | | 30850.85 | 2 | | III |
| 3241.12 | | | 30844.66 | 1 | | IV |
| 3241.45 | | | 30841.52 | 0 | | IV |
| 3241.97 | | | 30836.57 | 0 | | |
| 3242.86 | | | 30828.11 | 5 | | III |
| 3244.13 | | | 30816.04 | 2 | | III |
| 3244.83 | | | 30809.40 | 0 | | IV |
| 3246.85 | | | 30790.23 | 3 | | III |
| 3246.99 | | | 30788.90 | 3 | | IV |
| 3247.30 | | | 30785.96 | 0 | A | |
| 3247.69 | | | 30782.26 | 5 | W | III |
| | | 3248.02 | 30779.14 | 1 | B | III |
| 3248.62 | | | 30773.45 | 2 | | III |
| 3248.75 | | | 30772.22 | 0 | | III |
| 3248.98 | | | 30770.04 | 0 | | III |
| 3249.24 | | | 30767.58 | 0 | A | |
| | | 3249.36 | 30766.45 | 0 | | |
| 3250.06 | | | 30759.82 | 0 | | II |
| 3250.55 | | | 30755.18 | 3 | A | II |
| 3250.62 | | | 30754.52 | 0 | B | II |
| 3251.48 | | | 30746.39 | 1 | | |
| 3252.56 | | | 30736.18 | 0 | | |
| 3253.25 | | | 30729.66 | 4 | | III |
| 3254.47 | | | 30718.14 | 0 | | |
| 3255.34 | | | 30709.93 | 3 | | IV |
| 3255.83 | | | 30705.31 | 2 | | IV |
| 3256.25 | | | 30701.35 | 2 | | III |
| 3256.52 | | | 30698.80 | 0 | | III |
| 3256.66 | | | 30697.48 | 3 | | IV |
| 3257.07 | | | 30693.62 | 0 | A | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3257.85 | | | 30696.27 | 2 | | III |
| 3259.35 | | | 30677.15 | 1 | R | II |
| 3259.46 | | | 30671.11 | 4 | | III |
| 3259.98 | | | 30666.22 | 2 | W | |
| 3260.46 | | | 30661.71 | 0 | | III - IV |
| 3260.67 | | | 30659.73 | 0 | R | III - IV |
| 3260.86 | | | 30657.95 | 5 | W | |
| 3261.46 | | | 30652.21 | 0 | | IV |
| 3262.05 | | | 30646.76 | 0 | | II |
| 3263.53 | | | 30632.86 | 1 | | IV |
| 3264.62 | | | 30622.64 | 3 | | IV |
| 3265.33 | | | 30615.98 | 5 | W | |
| 3266.08 | | | 30609.05 | 0 | | II |
| 3266.94 | | | 30600.89 | 1 | | |
| 3267.05 | | | 30599.86 | 2 | | II - III |
| 3267.19 | | | 30599.55 | 3 | | |
| 3267.34 | | | 30597.15 | 0 | | II |
| 3267.88 | | | 30592.09 | 0 | | IV |
| 3268.22 | | | 30588.91 | 3 | | IV |
| 3268.51 | | | 30586.19 | 0 | | IV |
| 3268.98 | | | 30581.79 | 4 | | III |
| 3269.40 | | | 30577.87 | 0 | | III |
| 3270.17 | | | 30570.67 | 0 | | III - IV |
| 3270.57 | | | 30566.93 | 2 | | III - IV |
| 3270.85 | | | 30564.31 | 1 | | |
| 3271.10 | | | 30561.99 | 0 | | |
| 3271.21 | | | 30560.95 | 1 | | IV |
| 3272.09 | | | 30552.73 | 0 | | |
| 3272.91 | | | 30545.07 | 2 | | II |
| 3273.43 | | | 30540.22 | 2 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3273.74 | | | 30537.33 | 3 | | III - IV |
| 3274.46 | | | 30530.62 | 0 | | |
| | | 3274.71 | 30528.29 | 0 | W | III |
| 3274.90 | | | 30526.51 | 1 | | III |
| 3275.73 | | | 30518.78 | 1 | | |
| 3276.07 | | | 30515.61 | 0 | | |
| 3276.39 | | | 30512.63 | 2 | | III |
| 3276.59 | | | 30510.77 | 0 | | IV |
| 3277.07 | | | 30506.30 | 0 | | |
| 3277.28 | | | 30504.35 | 3 | | III - IV |
| 3277.55 | | | 30501.83 | 1 | | |
| 3278.44 | | | 30493.55 | 2 | | III |
| 3279.13 | | | 30487.14 | 0 | | III |
| 3280.50 | | | 30474.41 | 2 | | II - III |
| 3280.76 | | | 30471.99 | 0 | | III - IV |
| 3281.19 | | | 30468.00 | 1 | | II |
| 3281.44 | | | 30465.68 | 0 | | |
| 3281.82 | | | 30462.15 | 1 | | |
| 3284.46 | | | 30437.66 | 2 | W | |
| 3284.64 | | | 30436.00 | 1 | | III |
| 3284.75 | | | 30434.99 | 0 | | III |
| 3285.82 | | | 30425.07 | 1 | | III |
| 3285.98 | | | 30423.59 | 2 | | IV |
| 3287.00 | | | 30414.14 | 0 | | IV |
| 3287.08 | | | 30413.41 | 0 | A | IV |
| 3287.47 | | | 30409.80 | 2 | A | IV |
| 3287.80 | | | 30406.75 | 1 | | III |
| 3287.91 | | | 30405.73 | 2 | | III |
| 3288.54 | | | 30399.90 | 1 | | III - IV |
| 3289.03 | | | 30395.37 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3289.27 | | | 30393.16 | 1 | | |
| 3289.97 | | | 30386.60 | 1 | w | |
| 3290.22 | | | 30384.38 | 0 | | IV |
| 3290.37 | | | 30383.00 | 2 | | IV |
| 3291.18 | | | 30375.52 | 0 | | II - III |
| 3291.29 | | | 30374.50 | 0 | | |
| 3291.63 | | | 30371.37 | 0 | | |
| 3294.04 | | | 30349.15 | 0 | | |
| 3294.35 | | | 30346.29 | 0 | | IV |
| 3294.45 | | | 30345.37 | 0 | | IV |
| 3295.06 | | | 30339.75 | 0 | | II - III |
| 3295.56 | | | 30335.15 | 3 | | IV |
| 3295.76 | | | 30333.31 | 1 | | |
| 3295.94 | | | 30331.65 | 2 | | III |
| 3296.13 | | | 30329.90 | 0 | | II - III |
| 3296.48 | | | 30326.68 | 0 | | III - IV |
| 3297.51 | | | 30317.21 | 2 | | IV |
| 3298.38 | | | 30309.21 | 0 | | |
| 3298.71 | | | 30306.18 | 0 | | II |
| 3299.39 | | | 30299.94 | 1 | w | |
| 3299.80 | | | 30296.17 | 1 | | IV |
| 3300.21 | | | 30292.41 | 0 | | III |
| 3301.22 | | | 30283.14 | 1 | | III |
| 3301.42 | | | 30281.31 | 0 | | |
| 3301.54 | | | 30280.20 | 2 | | III |
| 3301.85 | | | 30277.36 | 0 | | IV |
| | | 3302.50 | 30271.40 | 1 | | II - III |
| 3303.32 | | | 30263.89 | 2 | | IV |
| 3304.05 | | | 30257.20 | 1 | | III |
| 3304.73 | | | 30250.98 | 1 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3305.02 | | | 30248.32 | 1 | A | |
| 3305.56 | | | 30239.72 | 5 | W | IV |
| 3306.18 | | | 30237.71 | 2 | | IV |
| 3306.46 | | | 30235.15 | 1 | A | III - IV |
| 3306.80 | | | 30232.04 | 2 | A | III |
| 3307.09 | | | 30229.39 | 0 | | |
| 3307.24 | | | 30228.02 | 0 | | |
| 3309.11 | | | 30210.94 | 1 | | IV |
| 3309.48 | | | 30207.56 | 0 | | II - III |
| 3309.98 | | | 30203.00 | 0 | | |
| 3310.40 | | | 30199.17 | 4 | A | III - IV |
| 3311.28 | | | 30191.14 | 0 | A | III - IV |
| 3311.81 | | | 30186.31 | 0 | | II |
| 3312.20 | | | 30182.75 | 0 | B | III - IV |
| 3312.33 | | | 30181.57 | 3 | | |
| 3312.92 | | | 30176.20 | 2 | | IV |
| 3313.35 | | | 30172.28 | 0 | | III - IV |
| 3313.51 | | | 30170.82 | 1 | | II |
| 3313.90 | | | 30167.27 | 2 | | IV |
| 3314.26 | | | 30163.99 | 1 | | III |
| 3314.87 | | | 30158.45 | 2 | | III |
| 3315.62 | | | 30151.62 | 0 | | IV |
| 3315.75 | | | 30150.44 | 1 | | |
| 3315.91 | | | 30148.99 | 0 | | III - IV |
| 3316.31 | | | 30145.35 | 1 | | II |
| 3317.39 | | | 30135.54 | 0 | B | III |
| 3317.45 | | | 30134.99 | 1 | | III |
| 3317.60 | | | 30133.63 | 0 | | |
| 3318.48 | | | 30125.64 | 0 | | III |
| 3318.61 | | | 30124.46 | 2 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3318.78 | | | 30122.91 | 1 | | III |
| 3319.00 | | | 30120.92 | 0 | | |
| 3319.41 | | | 30117.20 | 0 | | III |
| 3319.55 | | | 30115.93 | 1 | | III |
| 3319.66 | | | 30114.93 | 0 | | |
| 3319.94 | | | 30112.39 | 1 | | |
| 3320.07 | | | 30111.21 | 1 | | III |
| 3320.61 | | | 30106.32 | 0 | | IV |
| 3320.82 | | | 30104.41 | 1 | | IV |
| 3321.03 | | | 30102.51 | 1 | | II - III |
| 3321.44 | | | 30098.79 | 0 | | |
| 3322.19 | | | 30092.00 | 4 | | IV |
| 3322.57 | | | 30088.56 | 1 | | |
| 3323.11 | | | 30083.67 | 0 | | |
| 3323.45 | | | 30080.59 | 1 | | IV |
| 3324.09 | | | 30074.80 | 1 | | IV |
| 3324.80 | | | 30068.38 | 0 | | III - IV |
| 3325.96 | | | 30057.89 | 1 | | III - IV |
| 3326.39 | | | 30054.00 | 0 | | III |
| 3326.86 | | | 30049.76 | 1 | | IV |
| 3327.24 | | | 30046.32 | 0 | | |
| 3327.48 | | | 30044.16 | 1 | | II |
| 3328.32 | | | 30036.58 | 0 | | IV |
| 3329.39 | | | 30026.92 | 1 | | IV |
| 3329.74 | | | 30023.77 | 0 | | IV |
| 3329.91 | | | 30022.23 | 1 | | |
| 3330.84 | | | 30013.85 | 5 | w | III - IV |
| 3331.65 | | | 30006.56 | 3 | A | III |
| 3331.91 | | | 30004.21 | 0 | | |
| 3332.01 | | | 30003.31 | 0 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3332.49 | | | 29998.99 | 3 | | IV |
| 3332.83 | | | 29995.93 | 5 | A | III |
| 3333.10 | | | 29993.51 | 1 | A | III - IV |
| 3333.57 | | | 29989.27 | 1 | | IV |
| 3334.17 | | | 29983.88 | 3 | A | III - IV |
| 3334.23 | | | 29983.34 | 0 | | III |
| 3334.75 | | | 29978.66 | 1 | | III |
| 3336.24 | | | 29965.27 | 0 | | III |
| 3336.49 | | | 29963.03 | 2 | | III - IV |
| 3337.00 | | | 29958.45 | 0 | | |
| 3338.61 | | | 29944.00 | 0 | | III - IV |
| 3338.86 | | | 29941.76 | 3 | | III |
| 3338.99 | | | 29940.59 | 3 | A | III |
| 3339.19 | | | 29938.80 | 2 | | IV |
| 3339.50 | | | 29936.02 | 1 | | III |
| 3340.06 | | | 29931.00 | 2 | | III |
| 3340.37 | | | 29928.23 | 3 | A | III |
| 3340.67 | | | 29925.54 | 3 | B | III |
| 3340.76 | | | 29924.73 | 3 | B | III |
| 3341.81 | | | 29915.33 | 0 | | |
| 3342.83 | | | 29906.20 | 0 | | |
| 3343.02 | | | 29904.50 | 0 | | III |
| 3343.23 | | | 29902.62 | 1 | | |
| 3343.49 | | | 29900.30 | 2 | A | |
| 3344.27 | | | 29893.32 | 0 | | III |
| 3344.48 | | | 29891.45 | 0 | | |
| 3344.57 | | | 29890.65 | 2 | | IV |
| 3344.71 | | | 29889.39 | 1 | | |
| 3344.93 | | | 29887.43 | 1 | | III |
| 3345.49 | | | 29882.42 | 4 | | III - IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 3347.25 | 29866.71 | 2 | | II |
| 3347.35 | | | 29865.82 | 1 | | II - III |
| 3347.50 | | | 29860.91 | 0 | | IV |
| 3348.41 | | | 29856.37 | 0 | | |
| 3348.97 | | | 29851.37 | 1 | | III - IV |
| 3349.41 | | | 29847.45 | 4 | | III - IV |
| 3349.76 | | | 29844.33 | 2 | | III |
| 3350.35 | | | 29839.99 | 1 | | II |
| 3350.59 | | | 29836.94 | 1 | | |
| 3350.90 | | | 29834.18 | 2 | | |
| 3351.14 | | | 29832.05 | 0 | | |
| 3351.47 | | | 29829.11 | 1 | A | |
| 3352.95 | | | 29815.94 | 1 | | IV |
| 3353.54 | | | 29810.70 | 1 | | III - IV |
| 3354.33 | | | 29803.68 | 1 | | III |
| 3355.11 | | | 29796.75 | 2 | | IV |
| 3355.96 | | | 29789.21 | 2 | | III - IV |
| 3356.17 | | | 29787.34 | 1 | A | IV |
| | | 3357.88 | 29772.17 | 1 | | |
| 3357.99 | | | 29771.19 | 3 | | III |
| 3358.50 | | | 29766.67 | 0 | | III - IV |
| 3359.27 | | | 29759.85 | 0 | | |
| 3359.50 | | | 29757.81 | 0 | | |
| 3359.76 | | | 29755.51 | 0 | | |
| 3360.04 | | | 29753.03 | 1 | A | III - IV |
| 3360.22 | | | 29751.43 | 1 | | III - IV |
| 3360.36 | | | 29750.20 | 2 | | III - IV |
| 3360.68 | | | 29747.36 | 0 | | |
| 3361.00 | | | 29744.53 | 1 | A | |
| 3362.30 | | | 29733.03 | 1 | B | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3362.77 | | | 29728.87 | 1 | | III |
| 3363.50 | | | 29722.42 | 0 | | II - III |
| 3364.68 | | | 29712.00 | 1 | | IV |
| 3365.32 | | | 29706.35 | 1 | | II - III |
| 3365.54 | | | 29704.41 | 0 | A | |
| 3365.70 | | | 29703.00 | 1 | | |
| 3365.96 | | | 29700.70 | 0 | | |
| 3366.26 | | | 29698.05 | 3 | | |
| 3366.60 | | | 29695.06 | 3 | | |
| 3366.74 | | | 29693.82 | 2 | | II |
| 3367.19 | | | 29689.85 | 1 | | III - IV |
| 3367.50 | | | 29687.12 | 2 | B | IV |
| 3367.54 | | | 29686.77 | 2 | B | IV |
| 3368.88 | | | 29674.96 | 3 | | IV |
| 3369.13 | | | 29672.76 | 1 | | II |
| 3369.29 | | | 29671.35 | 1 | | II |
| 3369.75 | | | 29667.30 | 0 | | |
| 3370.29 | | | 29662.55 | 0 | | |
| 3370.65 | | | 29659.38 | 1 | | III |
| 3371.13 | | | 29655.15 | 0 | | III - IV |
| 3371.41 | | | 29652.69 | 0 | A | III - IV |
| 3371.66 | | | 29650.49 | 0 | A | III - IV |
| 3372.81 | | | 29640.38 | 0 | | |
| 3373.99 | | | 29630.02 | 0 | | |
| 3374.81 | | | 29622.82 | 1 | | III - IV |
| 3375.17 | | | 29619.66 | 0 | | II |
| 3376.50 | | | 29607.99 | 0 | | IV |
| 3376.98 | | | 29603.78 | 0 | | III |
| 3377.15 | | | 29602.29 | 4 | | |
| 3377.61 | | | 29598.26 | 0 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3377.79 | | | 29596.60 | 1 | | III - IV |
| 3378.94 | | | 29586.61 | 0 | | |
| 3379.03 | | | 29585.82 | 1 | | III |
| 3380.09 | | | 29576.55 | 3 | | IV |
| 3380.61 | | | 29572.00 | 0 | | |
| 3381.06 | | | 29568.06 | 0 | | IV |
| 3381.25 | | | 29566.40 | 1 | | III - IV |
| 3381.64 | | | 29562.90 | 1 | | IV |
| 3382.43 | | | 29556.08 | 0 | B | III |
| 3382.52 | | | 29555.30 | 1 | B | IV |
| 3382.59 | | | 29554.60 | 0 | P | IV |
| 3383.92 | | | 29543.07 | 2 | | III |
| 3384.10 | | | 29541.50 | 2 | A | II |
| 3384.85 | | | 29534.96 | 3 | A | IV |
| 3385.70 | | | 29527.54 | 1 | | |
| 3386.23 | | | 29522.92 | 0 | | III - IV |
| 3386.33 | | | 29522.05 | 0 | | III - IV |
| 3386.57 | | | 29519.96 | 1 | | III |
| 3386.75 | | | 29518.38 | 4 | | III |
| 3386.97 | | | 29516.47 | 1 | | III |
| 3387.71 | | | 29510.02 | 0 | H | |
| 3388.09 | | | 29506.71 | 0 | A | |
| 3389.22 | | | 29496.97 | 0 | | |
| 3389.95 | | | 29490.52 | 1 | | III |
| 3390.64 | | | 29484.52 | 2 | | III |
| 3392.58 | | | 29467.66 | 3 | | III |
| 3393.80 | | | 29457.07 | 2 | | IV |
| 3394.78 | | | 29448.57 | 2 | | IV |
| 3395.25 | | | 29444.49 | 0 | | |
| 3395.53 | | | 29442.06 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3396.31 | | | 29435.30 | 1 | | III |
| 3397.05 | | | 29428.89 | 1 | | |
| 3397.48 | | | 29425.16 | 1 | | III - IV |
| 3398.61 | | | 29415.38 | 1 | A | |
| 3398.97 | | | 29412.26 | 1 | | |
| 3399.30 | | | 29409.41 | 1 | | |
| 3399.52 | | | 29407.50 | 0 | | |
| 3399.87 | | | 29404.48 | 1 | | III |
| 3401.34 | | | 29391.77 | 0 | | IV |
| 3402.32 | | | 29383.31 | 0 | | |
| 3402.94 | | | 29377.95 | 4 | | |
| 3403.91 | | | 29369.58 | 2 | | III |
| 3405.47 | | | 29356.13 | 2 | A | III |
| 3407.11 | | | 29342.00 | 0 | | IV |
| 3407.28 | | | 29340.53 | 0 | H | IV |
| 3407.62 | | | 29337.61 | 0 | | IV |
| 3408.23 | | | 29332.35 | 1 | | |
| 3409.37 | | | 29322.55 | 1 | | II - III |
| 3413.17 | | | 29289.90 | 0 | | |
| 3413.28 | | | 29288.96 | 1 | | II |
| 3414.54 | | | 29278.15 | 1 | | |
| 3418.87 | | | 29241.07 | 1 | | |
| 3419.96 | | | 29231.75 | 1 | | III |
| 3420.72 | | | 29225.26 | 3 | | II |
| 3425.08 | | | 29188.06 | 1 | | |
| 3425.87 | | | 29181.33 | 1 | | IV |
| 3426.42 | | | 29176.64 | 1 | | III |
| 3428.03 | | | 29162.94 | 1 | | III |
| 3428.41 | | | 29159.71 | 0 | | III |
| 3431.54 | | | 29133.11 | 4 | W | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3432.02 | | | 29129.04 | 1 | | III |
| 3435.74 | | | 29097.50 | 3 | | III |
| 3436.00 | | | 29095.30 | 2 | | |
| 3437.52 | | | 29082.43 | 2 | | III |
| 3437.82 | | | 29079.89 | 3 | A | III |
| 3438.13 | | | 29077.27 | 3 | | III |
| 3438.22 | | | 29076.51 | 2 | | |
| 3440.78 | | | 29054.99 | 0 | | II |
| 3443.51 | | | 29031.84 | 0 | | III |
| 3444.24 | | | 29025.69 | 4 | D | III |
| 3444.39 | | | 29024.43 | 4 | B | III |
| 3446.37 | | | 29007.75 | 3 | | II |
| 3446.95 | | | 29002.87 | 0 | | IV |
| 3447.14 | | | 29001.27 | 0 | | IV |
| 3450.23 | | | 28975.30 | 0 | A | III |
| 3450.74 | | | 28971.02 | 0 | | IV |
| 3451.23 | | | 28966.90 | 1 | | III - IV |
| 3451.71 | | | 28962.88 | 0 | | III - IV |
| 3452.07 | | | 28959.86 | 0 | H | II |
| 3453.96 | | | 28944.01 | 2 | | |
| 3454.27 | | | 28941.41 | 5 | W | III |
| 3455.05 | | | 28934.94 | 1 | | IV |
| 3455.64 | | | 28929.94 | 1 | | |
| 3456.22 | | | 28925.08 | 1 | | III |
| 3458.11 | | | 28909.28 | 0 | H | III - IV |
| 3458.74 | | | 28904.01 | 5 | W | III |
| 3459.63 | | | 28896.58 | 1 | | |
| 3460.09 | | | 28892.73 | 2 | | II |
| 3461.29 | | | 28882.72 | 4 | W | II |
| 3462.36 | | | 28873.79 | 0 | H | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3462.71 | | | 28870.87 | 1 | | |
| 3462.95 | | | 28868.87 | 0 | | III |
| 3464.23 | | | 28858.20 | 0 | | II |
| 3465.20 | | | 28850.13 | 0 | H | III |
| 3466.21 | | | 28841.72 | 0 | | IV |
| 3466.78 | | | 28836.98 | 1 | | |
| 3467.22 | | | 28833.32 | 4 | W | III |
| 3467.72 | | | 28829.16 | 0 | | III |
| 3468.22 | | | 28825.01 | 4 | W | III |
| 3469.35 | | | 28815.62 | 0 | A | |
| 3469.88 | | | 28811.22 | 0 | | I |
| 3470.27 | | | 28807.98 | 2 | | IV |
| 3470.66 | | | 28804.74 | 3 | | IV |
| 3472.35 | | | 28790.72 | 1 | | III |
| 3472.48 | | | 28789.65 | 2 | | III |
| 3473.01 | | | 28785.25 | 1 | | III |
| 3473.22 | | | 28783.51 | 0 | | |
| 3474.12 | | | 28776.06 | 3 | | |
| 3474.25 | | | 28774.98 | 1 | | II |
| 3474.76 | | | 28770.76 | 3 | | IV |
| 3476.87 | | | 28753.30 | 1 | | |
| 3478.33 | | | 28741.23 | 0 | | |
| 3479.14 | | | 28734.54 | 1 | | III |
| 3479.72 | | | 28729.75 | 1 | | III - IV |
| 3483.25 | | | 28700.63 | 4 | | IV |
| 3485.27 | | | 28694.00 | 0 | | II |
| 3485.37 | | | 28693.18 | 2 | | III |
| 3486.00 | | | 28677.99 | 1 | | |
| 3488.13 | | | 28660.48 | 1 | | III |
| 3488.67 | | | 28656.04 | 0 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3490.56 | | | 28640.53 | 0 | | |
| 3491.07 | | | 28637.16 | 2 | | IV |
| 3491.55 | | | 28632.41 | 0 | | III |
| 3492.57 | | | 28624.05 | 0 | H | III |
| 3492.75 | | | 28622.24 | 3 | | III |
| 3492.94 | | | 28621.01 | 2 | | |
| 3494.51 | | | 28608.16 | 2 | | III |
| 3494.82 | | | 28605.62 | 1 | | III |
| 3496.02 | | | 28595.80 | 0 | | III |
| 3497.36 | | | 28584.84 | 1 | | III |
| 3497.89 | | | 28580.51 | 4 | | III |
| 3498.19 | | | 28578.06 | 2 | | III |
| 3498.86 | | | 28572.59 | 0 | | |
| 3499.31 | | | 28568.92 | 3 | | IV |
| 3500.35 | | | 28560.43 | 2 | | II |
| 3500.59 | | | 28558.47 | 3 | | IV |
| 3501.65 | | | 28549.82 | 3 | | III |
| 3503.14 | | | 28537.68 | 2 | | II |
| 3503.55 | | | 28534.34 | 1 | | III |
| 3503.86 | | | 28531.82 | 2 | | III - IV |
| 3504.26 | | | 28528.56 | 3 | | IV |
| 3504.61 | | | 28525.71 | 1 | | |
| 3506.56 | | | 28509.85 | 2 | | II |
| 3508.86 | | | 28491.16 | 2 | | II |
| 3509.77 | | | 28483.78 | 4 | | II - III |
| 3510.42 | | | 28478.50 | 1 | | |
| 3511.88 | | | 28466.66 | 0 | | IV |
| 3512.28 | | | 28463.42 | 0 | W | IV |
| 3512.84 | | | 28458.88 | 0 | A | III |
| 3513.56 | | | 28453.05 | 4 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3514.72 | | | 28443.66 | 0 | | II |
| 3515.63 | | | 28436.30 | 1 | | III |
| 3515.81 | | | 28434.84 | 3 | | |
| 3516.19 | | | 28431.77 | 1 | | III |
| 3516.71 | | | 28427.57 | 2 | | |
| 3518.82 | | | 28410.52 | 0 | | III - IV |
| 3519.11 | | | 28408.18 | 3 | | III |
| 3520.15 | | | 28399.79 | 0 | | |
| 3520.28 | | | 28398.74 | 0 | | |
| 3521.53 | | | 28398.66 | 2 | | |
| 3522.36 | | | 28391.97 | 0 | | III |
| 3522.80 | | | 28378.42 | 4 | | III |
| 3524.50 | | | 28364.09 | 2 | | |
| 3524.97 | | | 28360.95 | 0 | | IV |
| 3525.51 | | | 28356.61 | 1 | | |
| 3526.69 | | | 28347.12 | 0 | | |
| 3527.07 | | | 28344.07 | 1 | | III - IV |
| 3527.95 | | | 28337.00 | 1 | | III |
| 3530.27 | | | 28318.38 | 1 | | II |
| 3531.26 | | | 28310.44 | 2 | | III |
| 3531.62 | | | 28307.55 | 0 | | III |
| 3531.82 | | | 28305.95 | 2 | | III |
| 3532.81 | | | 28298.02 | 0 | | |
| 3533.00 | | | 28296.50 | 0 | | |
| 3533.19 | | | 28294.97 | 0 | A | |
| 3533.65 | | | 28291.29 | 0 | | IV |
| 3535.46 | | | 28276.81 | 3 | | |
| 3536.22 | | | 28270.73 | 1 | | |
| 3536.43 | | | 28269.05 | 0 | | III |
| 3536.60 | | | 28267.69 | 4 | | I |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3537.41 | | | 28261.22 | 4 | | III |
| 3538.03 | | | 28256.27 | 0 | | II - III |
| 3538.28 | | | 28254.27 | 0 | | |
| 3538.82 | | | 28249.96 | 0 | | |
| 3539.41 | | | 28245.25 | 0 | | |
| 3539.94 | | | 28241.02 | 4 | | III |
| 3541.22 | | | 28230.73 | 1 | | |
| 3541.37 | | | 28229.62 | 0 | | |
| 3542.35 | | | 28221.81 | 5 | W | III |
| 3543.20 | | | 28215.04 | 0 | | |
| 3543.33 | | | 28214.00 | 0 | | |
| 3544.06 | | | 28208.19 | 3 | | IV |
| 3544.35 | | | 28205.57 | 2 | | |
| 3544.86 | | | 28201.83 | 2 | | III |
| 3545.21 | | | 28199.04 | 0 | | |
| 3545.72 | | | 28194.91 | 0 | | III - IV |
| 3546.88 | | | 28185.77 | 1 | | III |
| 3548.61 | | | 28172.03 | 0 | | II |
| 3548.78 | | | 28170.68 | 0 | | III |
| 3550.01 | | | 28160.92 | 1 | | III |
| 3552.12 | | | 28144.19 | 4 | | III |
| 3553.26 | | | 28135.16 | 2 | | III |
| 3553.52 | | | 28133.02 | 1 | | |
| 3553.71 | | | 28131.60 | 1 | | |
| 3555.28 | | | 28119.17 | 0 | | III |
| 3556.28 | | | 28111.27 | 0 | | III |
| 3556.49 | | | 28109.61 | 4 | | III |
| 3556.98 | | | 28105.73 | 2 | | IV |
| 3557.28 | | | 28103.37 | 2 | | |
| 3557.41 | | | 28102.34 | 2 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3557.53 | | | 28101.39 | 1 | | III - IV |
| 3557.88 | | | 28098.63 | 2 | R | |
| 3557.96 | | | 28097.99 | 3 | R | III |
| 3558.41 | | | 28094.44 | 0 | | |
| 3558.53 | | | 28093.49 | 1 | | III |
| 3558.69 | | | 28092.23 | 3 | B | |
| 3560.36 | | | 28079.05 | 1 | | |
| 3560.82 | | | 28075.43 | 0 | | |
| 3560.96 | | | 28074.32 | 1 | | |
| 3561.12 | | | 28073.06 | 1 | | |
| 3561.23 | | | 28072.19 | 1 | | II - III |
| 3561.37 | | | 28071.09 | 3 | | III |
| 3562.22 | | | 28064.39 | 3 | | III |
| 3562.99 | | | 28058.33 | 2 | | III |
| 3563.77 | | | 28052.19 | 1 | | I |
| 3564.28 | | | 28048.17 | 2 | | II |
| 3564.86 | | | 28043.61 | 1 | | III |
| 3565.19 | | | 28041.01 | 4 | | III |
| 3565.91 | | | 28035.35 | 1 | | IV |
| 3566.57 | | | 28030.17 | 0 | | |
| 3567.71 | | | 28021.21 | 0 | | III |
| 3568.63 | | | 28013.98 | 0 | | |
| 3569.10 | | | 28010.30 | 0 | | |
| 3569.53 | | | 28006.92 | 2 | | IV |
| 3571.45 | | | 27991.87 | 1 | | |
| 3573.19 | | | 27978.23 | 2 | | IV |
| 3573.34 | | | 27977.06 | 3 | | III |
| 3574.25 | | | 27969.94 | 0 | | IV |
| 3574.40 | | | 27968.76 | 1 | | III |
| 3576.64 | | | 27951.25 | 0 | H | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3578.11 | | | 27939.77 | 1 | | |
| 3578.54 | | | 27926.41 | 1 | | III |
| 3578.72 | | | 27935.00 | 0 | | |
| 3578.99 | | | 27932.90 | 1 | | |
| 3579.70 | | | 27927.36 | 5 | W | III |
| 3579.86 | | | 27926.11 | 2 | B | |
| 3580.70 | | | 27919.56 | 1 | | |
| 3581.67 | | | 27912.00 | 0 | | |
| 3582.71 | | | 27903.99 | 2 | | IV |
| 3583.65 | | | 27896.57 | 5 | W | III |
| 3583.89 | | | 27894.71 | 3 | | |
| 3584.27 | | | 27891.75 | 1 | | III |
| 3584.50 | | | 27889.96 | 3 | | III |
| 3584.68 | | | 27888.56 | 1 | | IV |
| 3585.80 | | | 27879.85 | 1 | | III |
| 3586.04 | | | 27877.98 | 3 | | IV |
| 3586.75 | | | 27872.47 | 0 | | III |
| 3587.29 | | | 27868.27 | 3 | | III |
| 3587.67 | | | 27865.32 | 3 | | III |
| 3587.88 | | | 27863.69 | 0 | | III - IV |
| 3588.41 | | | 27859.57 | 1 | | |
| 3588.62 | | | 27857.94 | 1 | | II |
| 3589.02 | | | 27854.84 | 2 | B | |
| 3589.11 | | | 27854.14 | 1 | B | |
| 3589.78 | | | 27848.94 | 0 | | III - IV |
| 3590.21 | | | 27845.60 | 2 | | |
| 3590.37 | | | 27844.67 | 1 | | IV |
| 3591.98 | | | 27831.88 | 3 | | II - III |
| 3592.04 | | | 27831.42 | 0 | B | III |
| 3592.20 | | | 27830.18 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3592.55 | | | 27827.47 | 1 | A | III |
| 3593.15 | | | 27822.82 | 0 | | |
| 3593.38 | | | 27821.04 | 1 | | III |
| 3593.49 | | | 27820.19 | 2 | B | III |
| 3593.74 | | | 27818.25 | 0 | B | IV |
| 3593.85 | | | 27817.40 | 2 | | IV |
| 3594.06 | | | 27815.78 | 0 | | |
| 3594.29 | | | 27814.00 | 0 | | IV |
| 3594.60 | | | 27811.60 | 2 | | |
| 3595.10 | | | 27807.73 | 0 | | IV |
| 3595.37 | | | 27805.64 | 3 | | III |
| 3595.60 | | | 27803.86 | 0 | | |
| 3596.02 | | | 27800.62 | 0 | | IV |
| 3596.59 | | | 27796.21 | 4 | | III |
| 3596.77 | | | 27794.82 | 4 | B | |
| 3597.24 | | | 27791.19 | 0 | | |
| 3597.59 | | | 27788.48 | 0 | | |
| 3597.79 | | | 27786.94 | 1 | | III |
| 3599.23 | | | 27775.82 | 0 | | |
| 3599.49 | | | 27773.82 | 4 | | |
| 3599.78 | | | 27771.58 | 3 | | III |
| 3600.16 | | | 27768.65 | 0 | | |
| 3601.05 | | | 27761.78 | 3 | A | III |
| 3601.87 | | | 27755.46 | 2 | | III |
| 3602.10 | | | 27753.69 | 1 | | IV |
| 3602.39 | | | 27751.46 | 1 | | |
| 3602.56 | | | 27750.15 | 1 | | |
| 3603.04 | | | 27746.45 | 0 | | IV |
| 3603.18 | | | 27745.37 | 2 | | |
| 3604.11 | | | 27738.21 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3604.63 | | | 27734.21 | 2 | | |
| 3604.76 | | | 27733.21 | 1 | | II |
| 3605.07 | | | 27730.83 | 3 | | IV |
| 3605.79 | | | 27725.29 | 1 | A | |
| 3606.05 | | | 27723.29 | 3 | | III |
| 3607.02 | | | 27715.84 | 4 | B | III |
| 3607.14 | | | 27714.91 | 2 | B | |
| 3607.40 | | | 27712.92 | 1 | | II |
| 3607.58 | | | 27711.53 | 0 | | III |
| 3608.08 | | | 27707.69 | 2 | A | III - IV |
| 3609.07 | | | 27700.09 | 1 | H | IV |
| 3609.46 | | | 27697.10 | 4 | A | III |
| 3609.66 | | | 27695.57 | 2 | B | III |
| 3610.74 | | | 27687.28 | 0 | | IV |
| 3610.97 | | | 27685.52 | 0 | | |
| 3611.41 | | | 27682.15 | 0 | | II |
| 3612.01 | | | 27677.55 | 3 | | III |
| 3612.35 | | | 27674.94 | 3 | | II |
| 3612.51 | | | 27673.72 | 0 | | III |
| 3612.86 | | | 27671.04 | 0 | | IV |
| 3613.49 | | | 27666.21 | 0 | | |
| 3613.62 | | | 27665.22 | 1 | | III |
| 3615.37 | | | 27651.83 | 1 | | |
| 3615.86 | | | 27648.08 | 2 | | III |
| 3616.21 | | | 27645.40 | 1 | | III |
| 3616.94 | | | 27639.82 | 0 | A | IV |
| 3617.82 | | | 27633.10 | 1 | | |
| 3617.94 | | | 27632.18 | 1 | | |
| 3618.58 | | | 27627.30 | 1 | | III |
| 3618.86 | | | 27625.16 | 2 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3619.81 | | | 27617.91 | 1 | | III |
| 3620.00 | | | 27616.46 | 2 | | III - IV |
| 3620.21 | | | 27614.86 | 1 | | |
| 3620.88 | | | 27609.75 | 1 | | IV |
| 3621.06 | | | 27608.38 | 1 | | |
| 3621.59 | | | 27604.34 | 1 | | III |
| 3621.86 | | | 27602.28 | 1 | | II |
| 3621.98 | | | 27601.36 | 0 | | II |
| 3622.14 | | | 27600.14 | 0 | | III |
| 3622.61 | | | 27596.56 | 0 | A | IV |
| 3622.97 | | | 27593.82 | 3 | B | |
| 3623.13 | | | 27592.60 | 5 | B | III |
| 3624.06 | | | 27585.52 | 5 | W | III |
| 3625.07 | | | 27577.84 | 1 | | |
| 3625.81 | | | 27572.21 | 0 | | |
| 3627.54 | | | 27559.06 | 0 | | III |
| 3628.12 | | | 27554.65 | 0 | | |
| 3628.52 | | | 27551.62 | 1 | | III |
| 3628.81 | | | 27549.42 | 0 | | |
| 3629.42 | | | 27544.78 | 0 | | |
| 3630.66 | | | 27535.38 | 2 | | III |
| 3632.14 | | | 27524.16 | 4 | | III |
| 3632.57 | | | 27520.90 | 0 | | III |
| 3632.92 | | | 27518.25 | 0 | | |
| 3633.77 | | | 27511.81 | 3 | | |
| 3636.02 | | | 27494.79 | 2 | | III |
| 3636.34 | | | 27492.37 | 1 | | |
| 3637.68 | | | 27482.24 | 1 | | |
| 3638.37 | | | 27477.03 | 2 | | III |
| 3640.63 | | | 27459.97 | 3 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3640.99 | | | 27457.26 | 3 | | III |
| 3641.10 | | | 27456.43 | 1 | B | III |
| 3643.04 | | | 27441.81 | 0 | | |
| 3643.93 | | | 27435.11 | 1 | | III - IV |
| 3644.14 | | | 27433.52 | 2 | | III |
| 3644.28 | | | 27432.47 | 3 | B | |
| 3644.40 | | | 27431.57 | 2 | | II |
| 3644.89 | | | 27427.88 | 3 | | II |
| 3645.29 | | | 27424.87 | 3 | | |
| 3645.48 | | | 27423.44 | 4 | | |
| 3645.57 | | | 27422.76 | 3 | | IV |
| 3647.25 | | | 27410.13 | 1 | | III |
| 3648.32 | | | 27402.09 | 3 | | III |
| 3648.90 | | | 27397.74 | 3 | | IV |
| 3649.17 | | | 27395.71 | 0 | | |
| 3649.31 | | | 27394.66 | 0 | | |
| 3649.57 | | | 27392.71 | 2 | | II |
| 3649.93 | | | 27390.01 | 0 | | |
| 3651.74 | | | 27376.43 | 1 | | III |
| 3652.14 | | | 27373.43 | 0 | | |
| 3653.09 | | | 27366.31 | 2 | | III |
| 3654.24 | | | 27357.70 | 0 | | |
| 3654.44 | | | 27356.20 | 3 | B | |
| 3654.61 | | | 27354.93 | 3 | | III |
| 3654.96 | | | 27352.31 | 1 | | |
| 3656.62 | | | 27339.90 | 0 | | |
| 3657.73 | | | 27331.60 | 1 | | II |
| 3658.08 | | | 27328.99 | 2 | | IV |
| 3658.44 | | | 27326.30 | 2 | | II |
| 3658.62 | | | 27324.95 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3658.80 | | | 27323.61 | 1 | | IV |
| 3661.61 | | | 27302.64 | 3 | | II |
| 3661.97 | | | 27299.96 | 1 | H | IV |
| 3662.59 | | | 27295.33 | 1 | A | |
| 3663.05 | | | 27291.91 | 1 | | II |
| 3663.30 | | | 27290.04 | 1 | | II |
| 3663.88 | | | 27285.72 | 3 | B | III |
| 3663.94 | | | 27285.28 | 2 | B | II |
| 3664.09 | | | 27284.16 | 2 | | IV |
| 3664.46 | | | 27281.40 | 3 | | III - IV |
| 3665.05 | | | 27277.01 | 0 | | |
| 3665.47 | | | 27273.89 | 1 | | |
| 3665.79 | | | 27271.51 | 1 | | |
| 3666.75 | | | 27264.37 | 5 | W | III |
| 3667.79 | | | 27256.64 | 0 | | |
| 3667.94 | | | 27255.52 | 1 | | |
| 3668.18 | | | 27253.74 | 0 | A | |
| 3669.18 | | | 27246.31 | 5 | W | III |
| 3669.94 | | | 27240.67 | 0 | | I |
| 3670.21 | | | 27238.66 | 0 | | |
| 3671.38 | | | 27229.99 | 0 | | |
| 3671.81 | | | 27226.80 | 4 | | |
| 3672.22 | | | 27223.76 | 0 | | |
| 3672.55 | | | 27221.31 | 2 | | II |
| 3672.92 | | | 27218.57 | 3 | | |
| 3673.23 | | | 27216.27 | 3 | | |
| 3674.87 | | | 27204.13 | 1 | | |
| 3675.17 | | | 27201.90 | 0 | | III |
| 3675.62 | | | 27198.58 | 0 | | |
| 3676.01 | | | 27195.69 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3676.63 | | | 27191.10 | 5 | A | III |
| 3677.15 | | | 27187.26 | 1 | | |
| 3677.29 | | | 27186.22 | 1 | | |
| 3677.49 | | | 27184.75 | 1 | | |
| 3677.65 | | | 27183.56 | 0 | | |
| 3678.97 | | | 27173.81 | 1 | | |
| 3679.70 | | | 27168.42 | 0 | | |
| 3680.01 | | | 27166.13 | 0 | | III |
| 3680.76 | | | 27160.60 | 0 | | |
| 3681.01 | | | 27158.75 | 2 | | |
| 3681.29 | | | 27156.68 | 0 | | |
| 3681.85 | | | 27152.55 | 1 | | |
| 3682.16 | | | 27150.27 | 3 | W | IV |
| 3683.63 | | | 27139.43 | 1 | | IV |
| 3684.07 | | | 27136.19 | 1 | | |
| 3684.93 | | | 27129.86 | 2 | | III |
| 3685.38 | | | 27126.55 | 1 | | |
| 3685.70 | | | 27124.19 | 0 | | |
| 3686.40 | | | 27119.04 | 0 | | |
| 3686.73 | | | 27116.61 | 1 | | |
| 3687.04 | | | 27114.33 | 1 | | IV |
| 3687.98 | | | 27107.42 | 1 | | |
| 3688.29 | | | 27105.15 | 3 | | |
| 3688.86 | | | 27100.96 | 1 | A | II |
| 3689.31 | | | 27097.65 | 1 | H | |
| 3689.48 | | | 27096.40 | 0 | | III |
| 3689.83 | | | 27093.83 | 1 | | III |
| 3690.15 | | | 27091.48 | 4 | | |
| 3690.45 | | | 27089.28 | 3 | | |
| 3690.88 | | | 27086.12 | 1 | | II - III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3692.25 | | | 27076.08 | 1 | B | III - IV |
| 3692.32 | | | 27075.56 | 0 | B | III - IV |
| 3693.57 | | | 27066.40 | 1 | | IV |
| 3694.52 | | | 27059.44 | 1 | | |
| 3695.02 | | | 27055.78 | 0 | | |
| 3695.51 | | | 27052.19 | 1 | | |
| 3696.59 | | | 27044.29 | 3 | | |
| 3697.25 | | | 27039.46 | 0 | | |
| 3698.08 | | | 27033.39 | 3 | | |
| 3698.51 | | | 27030.25 | 2 | | II |
| 3699.30 | | | 27024.48 | 1 | | |
| 3699.78 | | | 27020.97 | 2 | B | |
| 3699.85 | | | 27020.46 | 2 | B | |
| 3702.66 | | | 26999.95 | 4 | | I |
| 3703.12 | | | 26996.60 | 1 | | |
| 3703.36 | | | 26994.85 | 4 | | |
| 3703.97 | | | 26990.40 | 3 | | |
| 3704.76 | | | 26984.65 | 1 | | IV |
| 3705.42 | | | 26979.84 | 1 | | IV |
| 3706.08 | | | 26975.04 | 1 | | |
| 3706.23 | | | 26973.95 | 2 | | III |
| 3706.52 | | | 26971.84 | 0 | | |
| 3707.63 | | | 26963.76 | 1 | | |
| 3708.15 | | | 26959.98 | 3 | | III |
| 3708.94 | | | 26954.24 | 3 | | III |
| 3709.39 | | | 26950.97 | 0 | A | III - IV |
| 3709.76 | | | 26948.28 | 1 | | |
| 3710.30 | | | 26944.36 | 3 | A | |
| 3711.16 | | | 26938.11 | 4 | W | |
| 3711.61 | | | 26934.85 | 2 | A | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3711.91 | | | 26932.67 | 2 | | III |
| 3712.48 | | | 26928.54 | 2 | A | IV |
| 3713.27 | | | 26922.81 | 3 | | |
| 3713.82 | | | 26918.82 | 1 | | |
| 3713.95 | | | 26917.88 | 1 | | |
| 3714.37 | | | 26914.83 | 3 | | IV |
| 3715.09 | | | 26909.62 | 2 | A | |
| 3715.25 | | | 26908.46 | 0 | | IV |
| 3715.58 | | | 26906.07 | 1 | | II - III |
| 3717.19 | | | 26894.42 | 2 | | II |
| 3717.79 | | | 26890.08 | 1 | | IV |
| 3718.55 | | | 26884.58 | 1 | | IV |
| 3719.90 | | | 26874.82 | 0 | | |
| 3720.06 | | | 26873.67 | 0 | | |
| 3720.91 | | | 26867.53 | 1 | B | IV |
| 3721.03 | | | 26866.66 | 0 | | IV |
| 3721.82 | | | 26860.96 | 0 | | IV |
| 3723.19 | | | 26851.08 | 1 | | |
| 3723.32 | | | 26850.14 | 1 | | IV |
| 3726.12 | | | 26829.96 | 0 | | IV |
| 3726.49 | | | 26827.30 | 3 | W | |
| 3727.11 | | | 26822.84 | 0 | | |
| 3728.47 | | | 26813.05 | 0 | A | IV |
| 3728.88 | | | 26810.10 | 0 | H | III |
| 3728.91 | | | 26809.89 | 1 | R | III |
| 3729.38 | | | 26806.51 | 0 | | IV |
| 3729.55 | | | 26805.29 | 2 | A | |
| 3730.04 | | | 26801.77 | 2 | H | |
| 3730.20 | | | 26800.62 | 5 | | III |
| 3730.52 | | | 26798.32 | 3 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3730.54 | | | 26795.30 | 1 | | III |
| 3731.00 | | | 26794.87 | 0 | B | II - III |
| 3731.17 | | | 26793.65 | 2 | | II |
| 3731.59 | | | 26790.63 | 3 | | IV |
| 3731.90 | | | 26788.41 | 1 | | |
| 3732.51 | | | 26784.03 | 0 | | |
| 3732.66 | | | 26782.95 | 3 | | III |
| 3733.64 | | | 26775.93 | 3 | w | |
| 3734.40 | | | 26770.48 | 1 | | |
| 3734.50 | | | 26769.76 | 0 | | IV |
| 3736.29 | | | 26756.94 | 1 | | |
| 3737.27 | | | 26749.92 | 1 | | II |
| 3737.98 | | | 26744.84 | 1 | | III - IV |
| 3738.08 | | | 26744.12 | 0 | | |
| 3738.54 | | | 26740.83 | 1 | | |
| 3739.60 | | | 26733.25 | 0 | | III - IV |
| 3739.76 | | | 26732.11 | 1 | | III - IV |
| 3740.15 | | | 26729.32 | 2 | | |
| 3740.90 | | | 26723.96 | 0 | | |
| 3741.12 | | | 26722.39 | 0 | | I |
| 3741.51 | | | 26719.61 | 0 | | |
| 3741.90 | | | 26716.82 | 2 | | |
| 3742.10 | | | 26715.39 | 0 | | III - IV |
| 3742.22 | | | 26714.54 | 3 | A | |
| 3742.99 | | | 26709.04 | 4 | A | |
| 3743.74 | | | 26703.69 | 0 | | III |
| 3744.67 | | | 26697.06 | 0 | | |
| 3744.79 | | | 26696.20 | 1 | | |
| 3745.46 | | | 26691.43 | 3 | A | |
| 3745.71 | | | 26689.65 | 5 | w | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3746.06 | | | 26687.15 | 1 | | |
| 3746.41 | | | 26684.66 | 0 | | |
| 3747.31 | | | 26678.25 | 1 | B | |
| 3747.39 | | | 26677.68 | 1 | B | |
| 3748.85 | | | 26667.29 | 2 | | IV |
| 3750.71 | | | 26654.07 | 4 | | III |
| 3751.33 | | | 26649.66 | 1 | | |
| 3751.44 | | | 26648.88 | 1 | | III |
| 3752.44 | | | 26641.78 | 1 | B | |
| 3752.62 | | | 26640.50 | 2 | B | |
| 3756.68 | | | 26611.71 | 0 | | |
| 3756.85 | | | 26610.51 | 1 | | II |
| 3757.98 | | | 26602.51 | 1 | | III |
| 3761.44 | | | 26578.03 | 1 | | IV |
| 3762.06 | | | 26573.66 | 1 | | II |
| 3762.28 | | | 26572.10 | 4 | | II |
| 3762.45 | | | 26570.90 | 2 | A | IV |
| 3762.94 | | | 26567.44 | 2 | | |
| 3763.36 | | | 26564.48 | 2 | | II |
| 3765.50 | | | 26549.38 | 3 | | |
| 3765.66 | | | 26548.25 | 0 | | |
| 3765.85 | | | 26546.91 | 4 | | III |
| 3768.03 | | | 26531.55 | 4 | W | |
| 3768.41 | | | 26528.88 | 0 | | |
| 3768.93 | | | 26525.22 | 2 | | III - IV |
| 3769.16 | | | 26523.60 | 3 | | |
| 3770.34 | | | 26515.30 | 1 | | III |
| 3770.77 | | | 26512.28 | 0 | | |
| 3770.91 | | | 26511.29 | 0 | | III |
| 3772.25 | | | 26501.87 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3772.53 | | | 26499.91 | 4 | | III |
| 3773.66 | | | 26491.97 | 0 | | II |
| 3773.83 | | | 26490.78 | 0 | | |
| 3774.11 | | | 26488.81 | 2 | B | |
| 3774.21 | | | 26487.41 | 0 | | |
| 3774.52 | | | 26485.94 | 1 | | III |
| 3774.67 | | | 26484.88 | 0 | | |
| 3775.27 | | | 26480.67 | 0 | | |
| 3775.49 | | | 26479.13 | 0 | | II |
| 3776.32 | | | 26473.31 | 5 | W | III |
| 3776.61 | | | 26471.28 | 4 | | |
| 3777.14 | | | 26467.56 | 1 | | |
| 3777.32 | | | 26466.30 | 1 | | |
| 3777.52 | | | 26464.90 | 3 | | IV |
| 3778.64 | | | 26457.06 | 0 | | IV |
| 3779.95 | | | 26447.89 | 1 | | |
| 3780.47 | | | 26444.25 | 3 | | III - IV |
| 3780.64 | | | 26443.06 | 1 | | II |
| 3781.00 | | | 26440.54 | 5 | W | III |
| 3781.64 | | | 26436.07 | 0 | | |
| 3782.05 | | | 26433.20 | 1 | | |
| 3782.30 | | | 26431.46 | 3 | W | |
| 3783.24 | | | 26424.89 | 1 | | II |
| 3783.49 | | | 26423.14 | 4 | | IV |
| 3784.60 | | | 26415.39 | 2 | | |
| 3785.12 | | | 26411.76 | 2 | | |
| 3786.16 | | | 26404.51 | 3 | | |
| 3787.30 | | | 26396.56 | 1 | | II |
| 3788.63 | | | 26387.30 | 0 | | III - IV |
| 3788.77 | | | 26386.32 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3789.97 | | | 26377.97 | 0 | | |
| 3790.22 | | | 26376.23 | 1 | | |
| 3791.67 | | | 26366.14 | 3 | | III |
| 3792.21 | | | 26362.39 | 2 | | |
| 3792.31 | | | 26361.69 | 3 | | IV |
| 3792.60 | | | 26359.68 | 2 | | |
| 3792.74 | | | 26358.70 | 0 | | III |
| 3793.30 | | | 26354.81 | 1 | | III - IV |
| 3793.47 | | | 26353.63 | 3 | W | |
| 3794.49 | | | 26346.55 | 2 | B | IV |
| 3794.57 | | | 26345.99 | 2 | B | |
| 3794.98 | | | 26343.15 | 1 | | |
| 3795.16 | | | 26341.89 | 2 | A | IV |
| 3795.83 | | | 26337.25 | 0 | | |
| 3796.93 | | | 26329.62 | 3 | W | IV |
| 3797.25 | | | 26327.40 | 1 | | |
| 3797.94 | | | 26322.62 | 0 | | IV |
| 3800.98 | | | 26301.56 | 1 | | II |
| 3801.71 | | | 26296.51 | 2 | | III |
| 3802.27 | | | 26292.64 | 1 | | |
| 3802.98 | | | 26287.73 | 1 | W | |
| 3803.26 | | | 26285.80 | 4 | | IV |
| 3805.15 | | | 26272.74 | 1 | | |
| 3805.77 | | | 26268.46 | 0 | | |
| 3806.37 | | | 26264.32 | 0 | | |
| 3807.29 | | | 26257.97 | 1 | | II |
| 3810.67 | | | 26234.68 | 0 | | |
| 3811.04 | | | 26232.14 | 2 | | II |
| 3811.74 | | | 26227.32 | 0 | | II - III |
| 3812.55 | | | 26221.75 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3815.16 | | | 26203.81 | 0 | | II |
| 3816.78 | | | 26192.69 | 1 | | III |
| 3817.38 | | | 26188.57 | 0 | | IV |
| 3819.49 | | | 26174.10 | 0 | | |
| 3823.15 | | | 26149.05 | 0 | | III |
| 3826.12 | | | 26128.75 | 1 | | II |
| 3827.81 | | | 26117.21 | 0 | | |
| 3827.98 | | | 26116.05 | 3 | | IV |
| 3829.71 | | | 26104.26 | 1 | | III |
| 3829.82 | | | 26103.51 | 1 | | III |
| 3834.43 | | | 26072.12 | 1 | | |
| 3836.51 | | | 26057.99 | 0 | W | III |
| 3837.71 | | | 26049.84 | 2 | | IV |
| 3840.47 | | | 26031.12 | 0 | | III - IV |
| 3841.53 | | | 26023.94 | 4 | | III |
| 3841.72 | | | 26022.65 | 1 | | III |
| 3841.87 | | | 26021.63 | 3 | | III |
| 3842.95 | | | 26014.32 | 0 | H | IV |
| 3843.22 | | | 26012.49 | 0 | H | III - IV |
| 3844.25 | | | 26005.53 | 0 | | III |
| 3845.03 | | | 26000.25 | 1 | | IV |
| 3846.98 | | | 25987.07 | 0 | | IV |
| 3847.40 | | | 25984.23 | 1 | | III |
| 3848.60 | | | 25976.13 | 2 | A | II |
| 3849.78 | | | 25968.17 | 3 | | II |
| 3850.98 | | | 25960.08 | 1 | A | I |
| 3852.40 | | | 25950.51 | 0 | | IV |
| 3854.28 | | | 25937.85 | 3 | | III |
| 3855.18 | | | 25931.80 | 0 | | |
| 3855.72 | | | 25928.17 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3856.13 | | | 25925.41 | 1 | A | |
| 3858.23 | | | 25911.30 | 1 | | |
| 3858.52 | | | 25909.35 | 2 | | II |
| 3860.19 | | | 25898.14 | 1 | | III |
| 3860.63 | | | 25895.19 | 0 | | II - III |
| 3860.84 | | | 25893.78 | 0 | | III |
| 3861.04 | | | 25892.44 | 3 | | III |
| 3861.51 | | | 25889.29 | 1 | | III - IV |
| 3861.93 | | | 25886.47 | 3 | | |
| 3862.49 | | | 25882.72 | 0 | | IV |
| 3866.61 | | | 25855.14 | 1 | | III |
| 3866.92 | | | 25853.07 | 1 | | |
| 3869.63 | | | 25834.96 | 3 | | II |
| 3871.37 | | | 25823.35 | 0 | | |
| 3873.51 | | | 25809.09 | 1 | | IV |
| 3876.94 | | | 25786.25 | 2 | | III - IV |
| 3877.35 | | | 25783.53 | 0 | | |
| 3877.82 | | | 25780.40 | 5 | | III |
| 3878.90 | | | 25773.22 | 0 | | |
| 3879.17 | | | 25771.43 | 1 | | IV |
| 3880.46 | | | 25762.86 | 4 | | III |
| 3881.30 | | | 25757.29 | 0 | | |
| 3881.59 | | | 25755.36 | 0 | | |
| 3883.13 | | | 25745.15 | 1 | A | |
| 3883.35 | | | 25743.69 | 1 | A | |
| 3884.99 | | | 25732.82 | 2 | | II |
| 3885.38 | | | 25730.24 | 1 | | II - III |
| 3886.72 | | | 25721.37 | 3 | | III |
| 3890.98 | | | 25693.21 | 0 | | III - IV |
| 3892.26 | | | 25684.76 | 1 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3894.73 | | | 25668.47 | 0 | | |
| 3895.05 | | | 25666.36 | 4 | | III |
| 3897.39 | | | 25650.95 | 3 | | IV |
| 3897.85 | | | 25647.93 | 1 | | |
| 3899.58 | | | 25636.55 | 2 | | IV |
| 3902.45 | | | 25617.70 | 1 | | |
| 3903.67 | | | 25609.69 | 2 | | III |
| 3904.33 | | | 25605.36 | 0 | | |
| 3904.92 | | | 25601.49 | 1 | | |
| 3905.86 | | | 25595.33 | 2 | B | II |
| 3905.93 | | | 25594.87 | 3 | B | III |
| 3906.70 | | | 25589.83 | 1 | | |
| 3906.98 | | | 25587.99 | 1 | | IV |
| 3907.83 | | | 25582.43 | 3 | | II |
| 3908.10 | | | 25580.66 | 1 | | |
| 3909.45 | | | 25571.83 | 2 | | |
| 3909.59 | | | 25570.91 | 1 | | |
| 3912.41 | | | 25552.48 | 1 | A | |
| 3912.81 | | | 25549.87 | 1 | A | |
| 3913.17 | | | 25547.52 | 1 | A | IV |
| 3913.96 | | | 25542.36 | 0 | | IV |
| 3914.32 | | | 25540.01 | 0 | A | IV |
| 3915.31 | | | 25533.55 | 2 | | III |
| 3917.12 | | | 25521.76 | 2 | | IV |
| 3918.57 | | | 25512.31 | 3 | | III |
| 3921.46 | | | 25493.51 | 0 | | |
| 3922.55 | | | 25486.43 | 5 | W | III |
| 3923.16 | | | 25482.46 | 0 | | |
| 3923.41 | | | 25480.84 | 3 | B | IV |
| 3923.51 | | | 25480.19 | 1 | B | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3923.64 | | | 25479.35 | 0 | | |
| 3925.62 | | | 25466.50 | 1 | | |
| 3926.82 | | | 25458.71 | 0 | | II |
| 3927.18 | | | 25456.38 | 0 | | |
| 3927.50 | | | 25454.31 | 1 | | IV |
| 3928.15 | | | 25450.09 | 2 | | IV |
| 3928.60 | | | 25447.18 | 1 | | IV |
| 3929.87 | | | 25438.96 | 1 | | IV |
| 3932.44 | | | 25422.33 | 2 | | III - IV |
| 3932.81 | | | 25419.94 | 0 | | IV |
| 3937.55 | | | 25389.34 | 0 | | II |
| 3938.91 | | | 25380.57 | 1 | | II |
| 3941.50 | | | 25363.90 | 0 | | III |
| 3941.74 | | | 25362.35 | 0 | | IV |
| 3942.20 | | | 25359.39 | 1 | | II |
| 3943.59 | | | 25350.45 | 2 | | II |
| 3948.18 | | | 25320.98 | 2 | | I |
| 3950.12 | | | 25308.55 | 0 | | III |
| 3950.59 | | | 25305.54 | 5 | W | III |
| 3951.53 | | | 25299.52 | 1 | | II |
| 3951.69 | | | 25298.49 | 0 | | II |
| 3954.78 | | | 25278.73 | 2 | | II |
| 3955.19 | | | 25276.11 | 1 | | IV |
| 3955.40 | | | 25274.76 | 2 | | III - IV |
| 3958.35 | | | 25255.93 | 3 | | III |
| 3959.54 | | | 25248.34 | 1 | | |
| 3960.29 | | | 25243.56 | 0 | H | |
| 3962.79 | | | 25227.63 | 1 | | |
| 3965.45 | | | 25210.71 | 2 | | III |
| 3966.95 | | | 25201.18 | 3 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 3967.25 | | | 25199.27 | 2 | | IV |
| 3969.91 | | | 25182.39 | 2 | | III |
| 3970.70 | | | 25177.38 | 0 | | |
| 3973.01 | | | 25162.74 | 4 | | IV |
| 3973.92 | | | 25156.98 | 0 | | III |
| 3975.55 | | | 25146.41 | 1 | | II |
| 3976.32 | | | 25141.79 | 2 | | III |
| 3977.81 | | | 25132.38 | 0 | | |
| 3978.59 | | | 25127.45 | 0 | | |
| 3979.21 | | | 25123.53 | 2 | | III |
| 3980.42 | | | 25115.90 | 0 | | II |
| 3980.66 | | | 25114.38 | 0 | | |
| 3981.55 | | | 25108.77 | 4 | | III |
| 3985.96 | | | 25080.99 | 3 | | III |
| 3986.74 | | | 25076.08 | 1 | | IV |
| 3990.25 | | | 25054.02 | 3 | | II |
| 3992.39 | | | 25040.59 | 1 | | |
| 3992.54 | | | 25039.65 | 1 | | III |
| 3992.85 | | | 25037.71 | 4 | | III |
| 3994.42 | | | 25027.87 | 2 | | III |
| 3996.06 | | | 25017.60 | 1 | | II |
| 3998.55 | | | 25002.02 | 1 | A | III |
| 3999.26 | | | 24997.58 | 2 | | III -IV |
| 4000.54 | | | 24989.58 | 1 | | II |
| 4001.18 | | | 24985.59 | 2 | | III - IV |
| 4002.36 | | | 24978.22 | 2 | | II |
| 4003.09 | | | 24973.66 | 1 | | |
| 4003.54 | | | 24970.86 | 3 | | III - IV |
| 4003.90 | | | 24968.61 | 1 | | IV |
| 4005.34 | | | 24959.64 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4006.26 | | | 24953.90 | 1 | | |
| 4006.63 | | | 24951.60 | 0 | | |
| 4010.38 | | | 24928.27 | 0 | | IV |
| 4011.88 | | | 24918.95 | 0 | | IV |
| 4013.84 | | | 24906.78 | 1 | | IV |
| 4014.09 | | | 24905.23 | 2 | | III - IV |
| 4016.57 | | | 24889.85 | 0 | | II |
| 4017.63 | | | 24883.29 | 2 | | IV |
| 4020.99 | | | 24862.49 | 0 | | |
| 4021.60 | | | 24858.72 | 2 | | III |
| 4025.17 | | | 24836.68 | 2 | | II |
| 4026.82 | | | 24826.50 | 0 | | |
| 4027.66 | | | 24821.32 | 1 | | |
| 4027.94 | | | 24819.60 | 4 | | III |
| 4028.56 | | | 24815.78 | 2 | | III |
| 4029.25 | | | 24811.53 | 1 | | IV |
| 4029.81 | | | 24808.08 | 0 | | II |
| 4030.46 | | | 24804.08 | 1 | | III |
| 4032.72 | | | 24790.18 | 0 | | |
| 4032.91 | | | 24789.01 | 1 | A | III - IV |
| 4033.77 | | | 24783.72 | 0 | | |
| 4034.37 | | | 24780.04 | 2 | | IV |
| 4034.85 | | | 24777.09 | 1 | | IV |
| 4037.26 | | | 24762.30 | 3 | | II |
| 4037.48 | | | 24760.95 | 3 | | II |
| 4038.14 | | | 24756.91 | 0 | | |
| 4038.46 | | | 24754.94 | 1 | | IV |
| 4042.47 | | | 24730.39 | 1 | | IV |
| 4043.23 | | | 24725.74 | 3 | | III |
| 4044.20 | | | 24719.81 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4044.33 | | | 24719.01 | 1 | | III |
| 4044.74 | | | 24716.51 | 1 | | III |
| 4046.56 | | | 24705.39 | 3 | B | II |
| 4047.30 | | | 24700.87 | 3 | | III - IV |
| 4048.94 | | | 24690.87 | 0 | B | IV |
| 4049.34 | | | 24688.43 | 2 | | III |
| 4050.07 | | | 24683.98 | 5 | W | III |
| 4051.18 | | | 24677.22 | 0 | | III - IV |
| 4051.64 | | | 24674.42 | 3 | | III - IV |
| 4053.04 | | | 24665.89 | 3 | | III |
| 4053.56 | | | 24662.73 | 3 | | III |
| 4055.43 | | | 24651.36 | 0 | H | IV |
| 4056.04 | | | 24647.65 | 3 | A | IV |
| 4057.37 | | | 24639.57 | 4 | A | III |
| 4058.15 | | | 24634.84 | 2 | | IV |
| 4059.03 | | | 24629.49 | 0 | H | IV |
| 4059.23 | | | 24628.28 | 1 | | IV |
| 4060.45 | | | 24620.88 | 4 | A | III |
| 4060.89 | | | 24618.21 | 4 | | III |
| 4061.12 | | | 24616.82 | 4 | | III |
| 4062.12 | | | 24610.76 | 1 | | II |
| 4063.69 | | | 24601.25 | 0 | | |
| 4064.09 | | | 24598.83 | 3 | | IV |
| 4064.50 | | | 24596.35 | 0 | | IV |
| 4064.75 | | | 24594.84 | 1 | | IV |
| 4065.10 | | | 24592.72 | 0 | | IV |
| 4066.48 | | | 24584.37 | 3 | | III |
| 4067.62 | | | 24577.48 | 0 | H | II |
| 4067.95 | | | 24575.49 | 2 | B | IV |
| 4068.11 | | | 24574.52 | 3 | B | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4069.08 | | | 24568.66 | 3 | B | IV |
| 4070.13 | | | 24562.33 | 4 | B | III |
| 4070.26 | | | 24561.54 | 3 | B | IV |
| 4071.33 | | | 24555.09 | 1 | B | IV |
| 4071.76 | | | 24552.49 | 0 | | |
| 4072.97 | | | 24545.20 | 0 | | III |
| 4073.49 | | | 24542.07 | 1 | | II |
| 4073.63 | | | 24541.22 | 1 | | IV |
| 4075.60 | | | 24529.36 | 0 | | |
| 4077.84 | | | 24515.89 | 1 | | II |
| 4078.13 | | | 24514.15 | 3 | | III - IV |
| 4078.70 | | | 24510.72 | 2 | | III |
| 4079.65 | | | 24505.01 | 0 | | |
| 4080.75 | | | 24498.41 | 0 | | |
| 4081.67 | | | 24492.88 | 2 | | IV |
| 4081.91 | | | 24491.44 | 1 | | III |
| 4082.59 | | | 24487.36 | 4 | B | II - III |
| 4082.73 | | | 24486.53 | 2 | B | III - IV |
| 4082.90 | | | 24485.51 | 2 | | III - IV |
| 4083.76 | | | 24480.35 | 1 | | IV |
| 4085.79 | | | 24468.19 | 1 | | III |
| 4086.63 | | | 24463.16 | 1 | | IV |
| 4087.79 | | | 24456.22 | 1 | | IV |
| 4089.81 | | | 24444.14 | 1 | | III - IV |
| 4090.46 | | | 24440.25 | 1 | | |
| 4091.51 | | | 24433.98 | 1 | | |
| 4091.90 | | | 24431.65 | 0 | | II |
| 4092.65 | | | 24427.17 | 0 | | |
| 4093.71 | | | 24420.85 | 1 | | IV |
| 4094.88 | | | 24413.87 | 3 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4095.03 | | | 24412.98 | 0 | B | |
| 4098.85 | | | 24390.23 | 2 | | II |
| 4100.33 | | | 24381.43 | 2 | | II |
| 4101.01 | | | 24377.39 | 0 | | II |
| 4103.85 | | | 24360.52 | 1 | | |
| 4106.10 | | | 24347.17 | 4 | | III |
| 4109.08 | | | 24329.51 | 4 | | III |
| 4109.53 | | | 24326.85 | 0 | A | |
| 4110.05 | | | 24323.78 | 2 | | III |
| 4110.40 | | | 24321.70 | 1 | | II |
| 4111.26 | | | 24316.57 | 3 | | III |
| 4111.57 | | | 24314.79 | 0 | | |
| 4112.42 | | | 24309.71 | 0 | | |
| 4112.54 | | | 24309.04 | 1 | | IV |
| 4113.26 | | | 24304.74 | 3 | | III |
| 4113.53 | | | 24303.20 | 0 | | II |
| 4115.38 | | | 24292.26 | 1 | | |
| 4115.65 | | | 24290.67 | 1 | | IV |
| 4116.22 | | | 24287.31 | 0 | | |
| 4119.83 | | | 24266.03 | 3 | | III - IV |
| 4121.88 | | | 24253.96 | 2 | | III - IV |
| 4125.15 | | | 24234.73 | 0 | | |
| 4125.83 | | | 24230.69 | 1 | A | IV |
| 4126.82 | | | 24224.94 | 0 | H | |
| 4128.37 | | | 24215.84 | 4 | A | III - IV |
| 4129.64 | | | 24208.39 | 3 | | III - IV |
| 4131.01 | | | 24200.36 | 2 | | II |
| 4131.24 | | | 24199.01 | 0 | | |
| 4132.40 | | | 24192.21 | 2 | | III |
| 4132.94 | | | 24189.06 | 4 | B | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4133.67 | | | 24184.74 | 1 | H | IV |
| 4134.32 | | | 24180.99 | 1 | | III - IV |
| 4135.71 | | | 24172.86 | 1 | | IV |
| 4137.47 | | | 24162.57 | 1 | | IV |
| 4138.85 | | | 24154.47 | 0 | | II |
| 4139.69 | | | 24149.62 | 0 | | |
| 4141.99 | | | 24136.16 | 3 | B | III |
| 4143.92 | | | 24124.92 | 1 | | |
| 4145.07 | | | 24118.28 | 3 | | IV |
| 4145.39 | | | 24116.42 | 0 | | |
| 4145.74 | | | 24114.33 | 4 | A | III |
| 4148.14 | | | 24100.43 | 0 | A | II |
| 4150.78 | | | 24085.10 | 0 | B | III - IV |
| 4152.04 | | | 24077.78 | 3 | A | III |
| 4152.74 | | | 24073.73 | 1 | | III |
| 4153.07 | | | 24071.82 | 1 | | IV |
| 4153.76 | | | 24067.82 | 1 | A | |
| 4154.66 | | | 24062.61 | 1 | | III |
| 4155.57 | | | 24057.34 | 3 | | III |
| 4156.17 | | | 24053.86 | 0 | | II |
| 4157.99 | | | 24043.33 | 3 | | II |
| 4160.58 | | | 24028.32 | 2 | | |
| 4162.17 | | | 24019.19 | 3 | | II |
| 4162.37 | | | 24018.04 | 1 | | |
| 4162.67 | | | 24016.30 | 4 | | IV |
| 4165.19 | | | 24001.77 | 1 | | |
| 4165.89 | | | 23997.74 | 2 | | IV |
| 4166.81 | | | 23992.44 | 0 | | |
| 4167.08 | | | 23990.84 | 0 | | IV |
| 4167.60 | | | 23987.89 | 0 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4168.01 | | | 23985.53 | 0 | | |
| 4170.87 | | | 23969.09 | 1 | | |
| 4171.30 | | | 23966.62 | 2 | | III - IV |
| 4173.37 | | | 23954.73 | 1 | | III - IV |
| 4173.64 | | | 23953.18 | 3 | | III - IV |
| 4174.26 | | | 23949.62 | 2 | | |
| 4175.15 | | | 23944.51 | 1 | | |
| 4176.53 | | | 23936.61 | 5 | W | III |
| 4177.10 | | | 23933.29 | 3 | | |
| 4177.71 | | | 23929.85 | 1 | | |
| 4177.99 | | | 23928.19 | 3 | | III - IV |
| 4179.62 | | | 23918.91 | 1 | | III |
| 4179.99 | | | 23916.79 | 4 | W | III |
| 4180.29 | | | 23915.07 | 1 | | II |
| 4180.83 | | | 23911.98 | 0 | | IV |
| 4181.15 | | | 23910.15 | 1 | | III - IV |
| 4193.04 | | | 23842.35 | 5 | W | I |
| 4194.74 | | | 23832.69 | 1 | | |
| 4194.87 | | | 23831.96 | 2 | | III |
| 4195.71 | | | 23827.19 | 2 | | IV |
| 4197.06 | | | 23819.52 | 2 | H | |
| 4197.69 | | | 23815.95 | 1 | | III |
| 4199.71 | | | 23804.49 | 0 | H | |
| 4201.15 | | | 23796.33 | 1 | | III - IV |
| 4202.08 | | | 23791.02 | 0 | | |
| 4202.39 | | | 23789.32 | 0 | A | IV |
| 4203.19 | | | 23784.78 | 1 | | II |
| 4203.89 | | | 23780.83 | 2 | | III |
| 4205.08 | | | 23774.05 | 2 | | |
| 4206.37 | | | 23766.80 | 1 | | III - IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4207.08 | | | 23762.79 | 1 | A | |
| 4208.38 | | | 23755.44 | 4 | | II |
| 4209.37 | | | 23749.87 | 3 | | II |
| 4209.58 | | | 23748.63 | 3 | | III |
| 4209.94 | | | 23746.65 | 2 | A | IV |
| 4213.60 | | | 23725.98 | 3 | | II - III |
| 4213.99 | | | 23723.82 | 4 | | III |
| 4214.26 | | | 23722.26 | 1 | B | |
| 4214.37 | | | 23721.69 | 1 | B | |
| 4214.69 | | | 23719.89 | 2 | | |
| 4214.92 | | | 23718.55 | 1 | | IV |
| 4215.30 | | | 23716.46 | 0 | | |
| 4215.60 | | | 23714.77 | 4 | | III |
| 4215.96 | | | 23712.74 | 2 | B | |
| 4216.03 | | | 23712.35 | 1 | B | |
| 4216.71 | | | 23708.53 | 2 | | III |
| 4216.91 | | | 23707.41 | 2 | B | |
| 4217.56 | | | 23703.74 | 1 | | |
| 4217.98 | | | 23701.39 | 1 | | IV |
| 4218.72 | | | 23697.22 | 2 | H | |
| 4221.40 | | | 23682.18 | 3 | | |
| 4222.89 | | | 23673.83 | 4 | | II - III |
| 4224.83 | | | 23662.91 | 1 | | |
| 4225.96 | | | 23656.63 | 0 | | |
| 4226.32 | | | 23654.62 | 1 | | |
| 4226.97 | | | 23650.97 | 2 | | III |
| 4227.23 | | | 23649.53 | 3 | | |
| 4228.10 | | | 23644.60 | 2 | | IV |
| 4228.80 | | | 23640.75 | 2 | | IV |
| 4229.94 | | | 23634.37 | 0 | A | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4230.08 | | | 23633.54 | 3 | | |
| 4230.99 | | | 23628.46 | 2 | | |
| 4233.92 | | | 23612.15 | 2 | | |
| 4235.76 | | | 23601.90 | 2 | A | |
| 4237.42 | | | 23592.61 | 1 | A | |
| 4237.66 | | | 23591.32 | 4 | | IV |
| 4237.96 | | | 23589.65 | 3 | B | |
| 4238.14 | | | 23588.65 | 5 | | II |
| 4238.31 | | | 23587.69 | 3 | B | IV |
| 4238.42 | | | 23587.04 | 2 | | |
| 4239.31 | | | 23582.13 | 2 | | |
| 4240.24 | | | 23576.96 | 4 | | III |
| 4243.24 | | | 23560.25 | 1 | H | |
| 4243.32 | | | 23559.86 | 1 | H | |
| 4243.42 | | | 23559.29 | 1 | H | |
| 4243.87 | | | 23556.80 | 2 | | II |
| 4244.03 | | | 23555.91 | 0 | | |
| 4244.39 | | | 23553.91 | 4 | | II |
| 4245.30 | | | 23548.87 | 5 | W | II |
| 4245.55 | | | 23547.48 | 0 | B | |
| 4246.01 | | | 23544.88 | 1 | | III - IV |
| 4246.38 | | | 23542.86 | 0 | | III - IV |
| 4251.31 | | | 23515.57 | 1 | B | |
| 4251.42 | | | 23514.92 | 3 | B | III |
| 4253.57 | | | 23503.08 | 3 | | III - IV |
| 4254.10 | | | 23500.11 | 1 | H | |
| 4254.42 | | | 23498.34 | 0 | | IV |
| 4255.92 | | | 23490.05 | 2 | | III - IV |
| 4257.06 | | | 23483.80 | 0 | | |
| 4261.85 | | | 23457.42 | 5 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4263.22 | | | 23449.87 | 0 | | |
| 4263.40 | | | 23448.88 | 3 | | II - III |
| 4263.58 | | | 23447.89 | 1 | | II |
| 4264.31 | | | 23443.88 | 0 | A | IV |
| 4264.65 | | | 23442.01 | 2 | A | |
| 4264.96 | | | 23440.31 | 1 | | IV |
| 4266.08 | | | 23434.15 | 1 | | III - IV |
| 4267.83 | | | 23424.50 | 3 | | III - IV |
| 4268.08 | | | 23423.13 | 2 | | |
| 4268.38 | | | 23421.52 | 2 | | |
| 4268.99 | | | 23418.18 | 1 | | II |
| 4269.83 | | | 23413.53 | 3 | A | II |
| 4270.24 | | | 23411.28 | 0 | | |
| 4271.51 | | | 23404.32 | 1 | | IV |
| 4272.58 | | | 23398.50 | 4 | | III |
| 4274.14 | | | 23389.97 | 0 | | III |
| 4274.57 | | | 23387.62 | 0 | A | |
| 4278.51 | | | 23366.03 | 0 | | IV |
| 4278.91 | | | 23363.90 | 0 | | II - III |
| 4279.26 | | | 23361.98 | 1 | | |
| 4279.55 | | | 23360.40 | 2 | A | IV |
| 4280.55 | | | 23354.95 | 2 | | III - IV |
| 4284.21 | | | 23334.99 | 0 | | IV |
| 4285.89 | | | 23325.85 | 4 | | III |
| 4286.64 | | | 23321.77 | 2 | | III |
| 4287.58 | | | 23316.65 | 1 | A | |
| 4288.71 | | | 23310.51 | 2 | | IV |
| 4289.33 | | | 23307.13 | 1 | | |
| 4290.94 | | | 23298.39 | 3 | | |
| 4291.10 | | | 23297.52 | 3 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4292.06 | | | 23292.31 | 0 | H | II - III |
| 4292.97 | | | 23287.37 | 0 | | |
| 4293.31 | | | 23285.52 | 2 | | IV |
| 4293.65 | | | 23283.68 | 2 | | III |
| 4294.40 | | | 23279.62 | 3 | | |
| 4295.17 | | | 23275.40 | 1 | A | |
| 4296.33 | | | 23269.12 | 3 | | II |
| 4296.79 | | | 23266.66 | 1 | | II |
| 4296.92 | | | 23265.92 | 2 | | |
| 4297.19 | | | 23264.46 | 2 | B | |
| 4297.26 | | | 23264.13 | 2 | B | |
| 4297.96 | | | 23260.34 | 2 | A | |
| 4298.75 | | | 23255.84 | 2 | | |
| 4299.51 | | | 23251.95 | 1 | H | |
| 4301.10 | | | 23243.31 | 0 | H | IV |
| 4302.51 | | | 23235.74 | 2 | | |
| 4304.99 | | | 23222.31 | 4 | | III |
| 4305.69 | | | 23218.54 | 4 | B | IV |
| 4305.83 | | | 23217.82 | 1 | B | III |
| 4306.17 | | | 23215.99 | 0 | | II |
| 4308.01 | | | 23206.07 | 3 | | III |
| 4309.32 | | | 23199.03 | 3 | | III |
| 4309.66 | | | 23197.20 | 1 | | IV |
| 4310.35 | | | 23193.48 | 2 | | III |
| 4310.58 | | | 23192.24 | 2 | | III |
| 4316.83 | | | 23158.62 | 1 | | IV |
| 4319.85 | | | 23142.47 | 0 | | |
| 4321.79 | | | 23132.08 | 2 | | II |
| 4322.04 | | | 23130.74 | 1 | | IV |
| 4322.83 | | | 23126.47 | 1 | A | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4324.48 | | | 23117.70 | 4 | | IV |
| 4325.19 | | | 23113.90 | 3 | | IV |
| 4329.64 | | | 23090.15 | 0 | | II - III |
| 4330.40 | | | 23086.09 | 5 | W | II |
| 4332.08 | | | 23077.14 | 0 | A | |
| 4332.69 | | | 23073.85 | 0 | H | IV |
| 4335.19 | | | 23060.54 | 1 | | IV |
| 4335.80 | | | 23057.34 | 1 | | II |
| 4341.01 | | | 23029.63 | 2 | | III - IV |
| 4342.31 | | | 23022.77 | 0 | | II |
| 4343.81 | | | 23014.82 | 0 | | IV |
| 4344.99 | | | 23008.57 | 0 | | IV |
| 4347.22 | | | 22996.76 | 1 | B | |
| 4350.23 | | | 22980.86 | 1 | | IV |
| 4356.26 | | | 22949.01 | 2 | | IV |
| 4357.63 | | | 22941.83 | 0 | | III |
| 4358.76 | | | 22935.89 | 0 | | III - IV |
| 4360.35 | | | 22927.48 | 4 | | II - III |
| 4360.96 | | | 22924.32 | 1 | | IV |
| 4361.54 | | | 22921.26 | 1 | | II |
| 4361.97 | | | 22919.00 | 0 | | IV |
| 4365.33 | | | 22901.37 | 4 | | III |
| 4366.60 | | | 22894.67 | 0 | H | IV |
| 4368.67 | | | 22883.86 | 1 | | IV |
| 4369.10 | | | 22881.57 | 3 | | II |
| 4369.26 | | | 22880.77 | 1 | B | II |
| 4371.78 | | | 22867.58 | 0 | | |
| 4372.74 | | | 22862.52 | 0 | W | III |
| 4373.06 | | | 22860.88 | 0 | | |
| 4373.64 | | | 22857.86 | 3 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4373.88 | | | 22856.59 | 1 | | |
| 4374.16 | | | 22855.15 | 2 | B | |
| 4374.58 | | | 22852.90 | 0 | | |
| 4375.81 | | | 22846.52 | 3 | | IV |
| 4376.16 | | | 22844.70 | 2 | | |
| 4376.44 | | | 22843.19 | 2 | | IV |
| 4378.60 | | | 22831.92 | 1 | | |
| 4379.30 | | | 22828.32 | 1 | | II |
| 4380.85 | | | 22820.20 | 1 | | IV |
| 4383.74 | | | 22805.19 | 3 | | IV |
| 4384.03 | | | 22803.69 | 2 | | IV |
| 4384.90 | | | 22799.16 | 3 | | II |
| 4385.05 | | | 22798.38 | 1 | | II |
| 4386.01 | | | 22793.35 | 1 | | III |
| 4387.47 | | | 22785.80 | 2 | | III |
| 4387.72 | | | 22784.50 | 1 | | III - IV |
| 4388.54 | | | 22780.24 | 4 | | IV |
| 4391.19 | | | 22766.50 | 0 | | IV |
| 4393.10 | | | 22756.60 | 4 | | II |
| 4393.65 | | | 22753.75 | 2 | | IV |
| 4394.24 | | | 22750.66 | 1 | | IV |
| 4395.17 | | | 22745.84 | 4 | | III |
| 4395.67 | | | 22743.30 | 3 | | II |
| 4399.17 | | | 22725.16 | 1 | | IV |
| 4400.08 | | | 22720.50 | 0 | | IV |
| 4400.40 | | | 22718.85 | 2 | | IV |
| 4400.69 | | | 22717.32 | 4 | | III - IV |
| 4400.91 | | | 22716.23 | 3 | | III - IV |
| 4401.41 | | | 22713.65 | 0 | | IV |
| 4402.03 | | | 22710.44 | 3 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4404.26 | | | 22698.90 | 1 | | IV |
| 4404.54 | | | 22697.49 | 1 | | |
| 4405.44 | | | 22692.86 | 3 | | IV |
| 4406.74 | | | 22686.16 | 2 | A | II |
| 4407.01 | | | 22684.74 | 1 | | IV |
| 4413.06 | | | 22653.67 | 2 | | III |
| 4414.66 | | | 22645.48 | 1 | B | II |
| 4414.89 | | | 22644.29 | 4 | B | II |
| 4415.97 | | | 22638.75 | 2 | | III |
| 4417.78 | | | 22629.48 | 1 | | III |
| 4417.97 | | | 22628.50 | 2 | | II - III |
| 4422.08 | | | 22607.47 | 3 | | IV |
| 4424.49 | | | 22595.11 | 1 | | IV |
| 4427.83 | | | 22578.07 | 2 | | IV |
| 4428.08 | | | 22576.84 | 0 | | |
| 4428.26 | | | 22575.92 | 3 | | IV |
| 4429.10 | | | 22571.60 | 3 | | IV |
| 4429.74 | | | 22568.38 | 0 | | |
| 4430.63 | | | 22563.84 | 0 | | |
| 4430.85 | | | 22562.69 | 1 | | IV |
| 4431.08 | | | 22561.55 | 0 | | |
| 4434.17 | | | 22545.83 | 3 | | III |
| 4434.37 | | | 22544.82 | 1 | | IV |
| 4435.01 | | | 22541.56 | 2 | | IV |
| 4435.38 | | | 22539.68 | 0 | | IV |
| 4436.55 | | | 22533.74 | 0 | H | III - IV |
| 4436.97 | | | 22531.60 | 3 | | IV |
| 4438.44 | | | 22524.10 | 2 | | IV |
| 4440.80 | | | 22512.18 | 2 | | III |
| 4441.15 | | | 22510.39 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4443.49 | | | 22498.50 | 2 | | IV |
| 4448.03 | | | 22475.58 | 4 | B | |
| 4448.13 | | | 22475.07 | 3 | B | II |
| 4451.08 | | | 22460.18 | 0 | H | II - III |
| 4453.29 | | | 22449.03 | 1 | | II - III |
| 4453.60 | | | 22447.47 | 3 | | III |
| 4458.56 | | | 22422.50 | 0 | H | |
| 4462.10 | | | 22404.71 | 5 | W | III |
| 4462.71 | | | 22401.65 | 1 | | IV |
| 4463.58 | | | 22397.28 | 0 | | III - IV |
| 4464.42 | | | 22393.03 | 0 | | III - IV |
| 4464.60 | | | 22392.13 | 0 | | II |
| 4465.88 | | | 22385.74 | 2 | | IV |
| 4466.42 | | | 22383.04 | 0 | | |
| 4467.92 | | | 22375.53 | 1 | | |
| 4468.16 | | | 22374.33 | 0 | | III |
| 4470.90 | | | 22360.61 | 3 | A | II |
| 4473.87 | | | 22345.77 | 0 | | II |
| 4474.17 | | | 22344.27 | 2 | | IV |
| 4475.53 | | | 22337.48 | 0 | | |
| 4478.24 | | | 22323.92 | 1 | | |
| 4480.05 | | | 22314.95 | 0 | | III |
| 4480.72 | | | 22311.60 | 4 | W | II |
| 4485.94 | | | 22285.65 | 2 | | II |
| 4487.46 | | | 22278.10 | 3 | B | |
| 4487.51 | | | 22277.85 | 3 | B | |
| 4488.26 | | | 22274.09 | 0 | | IV |
| 4488.51 | | | 22272.85 | 0 | | II |
| 4488.90 | | | 22270.95 | 0 | A | IV |
| 4490.01 | | | 22265.41 | 0 | H | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4492.80 | | | 22251.62 | 0 | A | III |
| 4496.91 | | | 22231.29 | 0 | A | III - IV |
| 4498.58 | | | 22222.99 | 1 | | III |
| 4500.96 | | | 22211.28 | 0 | | I |
| 4503.06 | | | 22200.92 | 0 | H | IV |
| 4503.41 | | | 22199.20 | 3 | A | III |
| 4506.80 | | | 22182.50 | 1 | | |
| 4507.14 | | | 22180.83 | 1 | | II |
| 4508.97 | | | 22171.82 | 0 | A | |
| 4511.90 | | | 22157.42 | 4 | | |
| 4512.15 | | | 22156.19 | 3 | B | |
| 4512.21 | | | 22155.91 | 2 | B | |
| 4513.24 | | | 22150.80 | 1 | A | III - IV |
| 4515.44 | | | 22140.05 | 0 | | IV |
| 4515.67 | | | 22138.92 | 3 | | |
| 4515.97 | | | 22137.45 | 1 | | IV |
| 4517.16 | | | 22131.63 | 1 | | IV |
| 4517.33 | | | 22130.79 | 0 | | IV |
| 4521.64 | | | 22109.70 | 3 | B | III |
| 4522.96 | | | 22103.25 | 1 | | IV |
| 4523.19 | | | 22102.12 | 2 | | IV |
| 4523.44 | | | 22100.90 | 4 | | |
| 4524.19 | | | 22097.24 | 3 | A | II |
| 4524.67 | | | 22094.89 | 0 | | I |
| 4524.97 | | | 22093.42 | 2 | A | IV |
| 4525.63 | | | 22090.20 | 0 | | III |
| 4526.15 | | | 22087.66 | 0 | B | III |
| 4526.22 | | | 22087.32 | 0 | B | |
| 4526.38 | | | 22086.54 | 3 | | |
| 4528.24 | | | 22077.47 | 1 | H | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4528.44 | | | 22076.50 | 1 | H | |
| 4530.35 | | | 22067.19 | 0 | H | IV |
| 4531.98 | | | 22059.26 | 2 | | IV |
| 4532.48 | | | 22056.82 | 4 | W | II |
| 4533.17 | | | 22053.42 | 2 | | |
| 4533.32 | | | 22052.74 | 0 | | III - IV |
| 4534.90 | | | 22045.04 | 2 | A | I - II |
| 4536.78 | | | 22035.91 | 2 | | II |
| 4536.92 | | | 22035.19 | 3 | B | II |
| 4537.38 | | | 22032.99 | 5 | B | |
| 4538.53 | | | 22027.38 | 4 | A | |
| 4539.53 | | | 22022.53 | 0 | H | III - IV |
| 4540.80 | | | 22016.41 | 4 | A | II |
| 4543.60 | | | 22002.80 | 0 | | IV |
| 4545.15 | | | 21995.33 | 5 | W | II |
| 4546.35 | | | 21989.49 | 0 | | IV |
| 4549.31 | | | 21975.22 | 0 | | |
| 4550.66 | | | 21968.71 | 1 | | II |
| 4550.91 | | | 21967.50 | 2 | B | |
| 4550.99 | | | 21967.11 | 2 | | IV |
| 4552.41 | | | 21960.26 | 2 | A | III - IV |
| 4555.51 | | | 21945.28 | 2 | A | |
| 4555.81 | | | 21943.86 | 3 | A | II - III |
| 4556.44 | | | 21940.80 | 0 | H | III - IV |
| 4557.35 | | | 21936.45 | 1 | | IV |
| 4557.76 | | | 21934.44 | 2 | B | |
| 4557.81 | | | 21934.24 | 2 | B | III - IV |
| 4558.49 | | | 21930.97 | 4 | W | IV |
| 4559.98 | | | 21923.81 | 3 | | |
| 4560.97 | | | 21919.04 | 5 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4562.87 | | | 21909.92 | 0 | H | III - IV |
| 4568.15 | | | 21884.59 | 3 | | |
| 4568.58 | | | 21882.53 | 2 | | |
| 4568.78 | | | 21881.58 | 1 | | IV |
| 4569.12 | | | 21879.95 | 2 | | III |
| 4570.06 | | | 21875.44 | 4 | A | III |
| 4570.73 | | | 21872.25 | 3 | | |
| 4571.53 | | | 21868.41 | 0 | A | II |
| 4572.73 | | | 21862.68 | 4 | | |
| 4573.96 | | | 21856.80 | 1 | | III - IV |
| 4575.39 | | | 21849.97 | 4 | | |
| 4575.74 | | | 21848.29 | 0 | | IV |
| 4575.89 | | | 21847.58 | 1 | A | |
| 4577.03 | | | 21842.14 | 3 | | II |
| 4578.03 | | | 21837.33 | 2 | | |
| 4579.35 | | | 21831.03 | 3 | | |
| 4579.47 | | | 21830.49 | 2 | | |
| 4580.01 | | | 21827.92 | 4 | | |
| 4580.51 | | | 21825.54 | 1 | | II |
| 4580.96 | | | 21823.40 | 3 | | |
| 4582.60 | | | 21815.55 | 2 | | |
| 4582.74 | | | 21814.88 | 0 | | I |
| 4582.85 | | | 21814.36 | 2 | | |
| 4583.35 | | | 21812.02 | 3 | | |
| 4583.69 | | | 21810.36 | 2 | | |
| 4584.15 | | | 21808.21 | 2 | | |
| 4585.38 | | | 21802.35 | 5 | W | |
| 4587.78 | | | 21790.96 | 1 | A | IV |
| 4588.28 | | | 21788.58 | 2 | | I |
| 4591.80 | | | 21771.88 | 1 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4591.94 | | | 21771.22 | 2 | | II |
| 4592.15 | | | 21770.18 | 2 | B | |
| 4592.30 | | | 21769.51 | 3 | B | |
| 4592.51 | | | 21768.47 | 5 | | |
| 4592.85 | | | 21766.86 | 1 | | |
| 4592.98 | | | 21766.29 | 0 | H | III - IV |
| 4593.69 | | | 21762.92 | 1 | | II |
| 4595.14 | | | 21756.06 | 4 | | |
| 4595.92 | | | 21752.36 | 3 | | |
| 4599.19 | | | 21736.86 | 2 | B | |
| 4599.26 | | | 21736.53 | 2 | B | III |
| 4599.31 | | | 21736.32 | 2 | B | |
| 4599.78 | | | 21734.07 | 0 | A | III - IV |
| 4600.19 | | | 21732.17 | 1 | A | |
| 4601.60 | | | 21725.47 | 0 | | III |
| 4601.74 | | | 21724.81 | 1 | B | |
| 4602.13 | | | 21723.00 | 1 | H | |
| 4603.03 | | | 21718.76 | 5 | W | II |
| 4605.67 | | | 21706.27 | 5 | W | |
| 4608.28 | | | 21694.02 | 4 | | |
| 4609.57 | | | 21687.95 | 4 | B | |
| 4611.65 | | | 21678.16 | 5 | A | |
| 4613.42 | | | 21669.85 | 5 | | |
| 4614.83 | | | 21663.19 | 0 | | III |
| 4615.01 | | | 21662.35 | 2 | | II |
| 4617.24 | | | 21651.88 | 1 | B | |
| 4617.40 | | | 21651.13 | 2 | | II |
| 4619.17 | | | 21642.84 | 0 | H | II |
| 4619.57 | | | 21641.01 | 0 | | III - IV |
| 4620.42 | | | 21636.98 | 0 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4624.28 | | | 21618.96 | 0 | | I |
| 4625.83 | | | 21611.68 | 0 | H | III - IV |
| 4627.56 | | | 21603.63 | 2 | A | |
| 4628.71 | | | 21598.27 | 3 | | |
| 4629.83 | | | 21593.04 | 5 | | |
| 4629.99 | | | 21592.29 | 5 | | |
| 4630.26 | | | 21591.00 | 4 | | |
| 4631.46 | | | 21585.45 | 1 | | III |
| 4631.65 | | | 21584.56 | 0 | A | II - III |
| 4632.35 | | | 21581.30 | 1 | A | |
| 4632.64 | | | 21579.95 | 1 | | III |
| 4632.92 | | | 21578.60 | 2 | | |
| 4633.28 | | | 21576.97 | 2 | | II |
| 4634.06 | | | 21573.33 | 0 | H | IV |
| 4634.49 | | | 21571.29 | 3 | | IV |
| 4634.58 | | | 21570.87 | 1 | A | |
| 4639.65 | | | 21547.34 | 1 | | |
| 4641.40 | | | 21539.18 | 2 | | III |
| 4643.60 | | | 21529.01 | 0 | | III |
| 4644.17 | | | 21526.33 | 0 | | III |
| 4644.35 | | | 21525.50 | 1 | | |
| 4645.96 | | | 21518.08 | 0 | | III |
| 4647.42 | | | 21511.28 | 5 | W | IV |
| 4648.60 | | | 21505.82 | 1 | | |
| 4650.24 | | | 21498.23 | 5 | W | IV |
| 4651.46 | | | 21492.64 | 4 | W | IV |
| 4651.90 | | | 21490.60 | 3 | A | II |
| 4652.47 | | | 21487.96 | 1 | | IV |
| 4653.01 | | | 21485.47 | 2 | | II |
| 4653.44 | | | 21483.45 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4655.40 | | | 21474.44 | 3 | | III |
| 4656.73 | | | 21468.32 | 2 | H | III - IV |
| 4657.03 | | | 21466.93 | 4 | | |
| 4657.78 | | | 21463.47 | 5 | B | III |
| 4657.90 | | | 21462.92 | 1 | B | |
| 4659.06 | | | 21457.57 | 1 | H | |
| 4659.78 | | | 21454.23 | 0 | | IV |
| 4663.12 | | | 21438.90 | 2 | H | II |
| 4664.26 | | | 21433.62 | 4 | | |
| 4666.26 | | | 21424.47 | 1 | | II |
| 4667.15 | | | 21420.38 | 4 | | IV |
| 4668.33 | | | 21414.93 | 1 | B | IV |
| 4668.48 | | | 21414.28 | 3 | B | II |
| 4668.87 | | | 21412.49 | 0 | W | IV |
| 4670.03 | | | 21407.14 | 0 | A | III - IV |
| 4670.87 | | | 21403.32 | 4 | A | |
| 4671.23 | | | 21401.68 | 1 | | I |
| 4671.38 | | | 21400.98 | 3 | | |
| 4671.60 | | | 21399.98 | 2 | | III |
| 4671.81 | | | 21399.01 | 0 | | III |
| 4672.08 | | | 21397.74 | 2 | | III |
| 4672.38 | | | 21396.40 | 1 | A | |
| 4673.67 | | | 21390.46 | 3 | A | III |
| 4673.94 | | | 21389.23 | 1 | H | |
| 4674.53 | | | 21386.53 | 2 | | II |
| 4675.42 | | | 21382.49 | 3 | | |
| 4675.58 | | | 21381.72 | 1 | | IV |
| 4676.67 | | | 21376.78 | 1 | | III |
| 4678.49 | | | 21368.42 | 5 | | |
| 4678.60 | | | 21367.92 | 0 | H | III - IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4679.44 | | | 21364.13 | 0 | | II |
| 4679.69 | | | 21362.95 | 5 | W | |
| 4680.73 | | | 21358.24 | 0 | H | IV |
| 4681.53 | | | 21354.55 | 0 | H | IV |
| 4681.65 | | | 21354.04 | 1 | H | |
| 4683.03 | | | 21347.71 | 1 | | |
| 4683.55 | | | 21345.38 | 4 | | III |
| 4683.80 | | | 21344.24 | 3 | B | |
| 4684.76 | | | 21339.83 | 5 | W | |
| 4685.19 | | | 21337.87 | 2 | A | III |
| 4686.74 | | | 21330.85 | 1 | | IV |
| 4687.47 | | | 21327.52 | 4 | | |
| 4688.24 | | | 21323.99 | 3 | | |
| 4692.05 | | | 21306.71 | 1 | B | |
| 4692.15 | | | 21306.22 | 4 | B | |
| 4693.22 | | | 21301.39 | 1 | | II |
| 4696.48 | | | 21286.62 | 4 | | III - IV |
| 4697.01 | | | 21284.17 | 0 | | |
| 4697.42 | | | 21282.35 | 1 | | III |
| 4697.92 | | | 21280.05 | 3 | A | III |
| 4699.49 | | | 21272.97 | 0 | | II |
| 4699.92 | | | 21271.03 | 1 | A | IV |
| 4700.21 | | | 21269.72 | 0 | H | IV |
| 4700.74 | | | 21267.28 | 0 | | IV |
| 4703.92 | | | 21252.91 | 4 | | |
| 4704.35 | | | 21250.97 | 0 | A | II |
| 4704.69 | | | 21249.43 | 1 | | II |
| 4706.35 | | | 21241.94 | 0 | H | III - IV |
| 4706.90 | | | 21239.45 | 1 | A | II |
| 4707.03 | | | 21238.90 | 4 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4708.35 | | | 21232.91 | 4 | | IV |
| 4708.78 | | | 21231.01 | 1 | | II |
| 4709.08 | | | 21229.62 | 4 | | |
| 4712.58 | | | 21213.89 | 2 | A | II |
| 4712.94 | | | 21212.27 | 2 | | |
| 4714.42 | | | 21205.57 | 1 | | III |
| 4714.58 | | | 21204.89 | 0 | | IV |
| 4715.05 | | | 21202.78 | 2 | | II |
| 4715.65 | | | 21200.07 | 0 | | IV |
| 4716.26 | | | 21197.30 | 0 | H | III - IV |
| 4716.55 | | | 21196.04 | 5 | | IV |
| 4717.38 | | | 21192.30 | 1 | | |
| 4719.92 | | | 21180.90 | 4 | | |
| 4720.88 | | | 21176.59 | 0 | | II |
| 4721.64 | | | 21173.19 | 1 | H | |
| 4722.31 | | | 21170.18 | 0 | | III - IV |
| 4723.14 | | | 21166.46 | 5 | W | |
| 4723.60 | | | 21164.40 | 5 | W | III |
| 4724.08 | | | 21162.21 | 3 | | |
| 4726.48 | | | 21151.51 | 5 | | |
| 4726.88 | | | 21149.71 | 3 | | |
| 4727.48 | | | 21147.03 | 3 | | |
| 4727.82 | | | 21145.51 | 3 | | |
| 4729.17 | | | 21139.44 | 4 | | |
| 4731.12 | | | 21130.76 | 5 | W | II |
| 4731.48 | | | 21129.16 | 0 | H | IV |
| 4732.55 | | | 21124.38 | 5 | | II |
| 4733.35 | | | 21120.80 | 4 | | |
| 4734.15 | | | 21117.23 | 5 | | I - II |
| 4735.22 | | | 21112.46 | 0 | H | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4735.67 | | | 21110.42 | 2 | H | IV |
| 4735.92 | | | 21109.34 | 3 | | |
| 4736.17 | | | 21108.23 | 5 | w | |
| 4736.81 | | | 21105.37 | 3 | A | IV |
| 4737.51 | | | 21102.22 | 2 | H | IV |
| 4737.67 | | | 21101.51 | 4 | | |
| 4739.01 | | | 21095.58 | 3 | | IV |
| 4739.12 | | | 21095.09 | 0 | | IV |
| 4740.38 | | | 21089.48 | 2 | | |
| 4741.99 | | | 21082.32 | 5 | w | IV |
| 4742.85 | | | 21078.46 | 0 | H | |
| 4743.38 | | | 21076.14 | 2 | | |
| 4743.90 | | | 21073.83 | 5 | w | III |
| 4744.55 | | | 21070.95 | 2 | H | IV |
| 4744.72 | | | 21070.19 | 4 | H | |
| 4746.03 | | | 21064.38 | 3 | | |
| 4746.63 | | | 21061.71 | 1 | | |
| 4748.28 | | | 21054.36 | 1 | A | |
| 4748.49 | | | 21053.43 | 5 | w | |
| 4748.94 | | | 21051.47 | 5 | w | III |
| 4749.07 | | | 21050.90 | 1 | B | IV |
| 4749.19 | | | 21050.33 | 1 | B | |
| 4749.63 | | | 21048.40 | 5 | w | |
| 4750.65 | | | 21043.85 | 4 | | |
| 4752.39 | | | 21036.19 | 4 | | |
| 4753.08 | | | 21033.10 | 2 | B | III |
| 4753.60 | | | 21030.80 | 5 | w | |
| 4754.55 | | | 21026.63 | 1 | H | IV |
| 4756.39 | | | 21018.50 | 0 | H | IV |
| 4757.32 | | | 21014.39 | 5 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4757.44 | | | 21013.86 | 1 | B | |
| 4759.35 | | | 21005.42 | 2 | | |
| 4761.85 | | | 20994.40 | 3 | A | IV |
| 4762.67 | | | 20990.78 | 3 | | |
| 4764.87 | | | 20981.09 | 3 | | |
| 4765.85 | | | 20976.74 | 5 | | |
| 4766.35 | | | 20974.57 | 3 | H | III |
| 4767.76 | | | 20968.37 | 3 | W | IV |
| 4768.67 | | | 20964.37 | 4 | W | IV |
| 4769.05 | | | 20962.70 | 5 | W | III |
| 4771.38 | | | 20952.46 | 4 | | |
| 4771.65 | | | 20951.27 | 4 | | |
| 4771.96 | | | 20949.92 | 3 | | |
| 4772.96 | | | 20945.53 | 5 | W | |
| 4773.21 | | | 20944.43 | 5 | W | II |
| 4773.94 | | | 20941.23 | 3 | | |
| 4775.19 | | | 20935.71 | 5 | W | II |
| 4775.49 | | | 20934.43 | 1 | A | |
| 4775.67 | | | 20933.64 | 3 | A | II |
| 4775.90 | | | 20932.63 | 3 | H | IV |
| 4776.33 | | | 20930.75 | 1 | H | |
| 4777.21 | | | 20926.90 | 2 | H | |
| 4778.19 | | | 20922.57 | 5 | W | |
| 4779.01 | | | 20918.98 | 1 | B | |
| 4779.15 | | | 20918.36 | 4 | B | II |
| 4779.33 | | | 20917.61 | 3 | B | III - IV |
| 4780.15 | | | 20913.99 | 5 | W | IV |
| 4781.08 | | | 20909.92 | 2 | H | |
| 4781.35 | | | 20908.77 | 0 | | IV |
| 4782.33 | | | 20904.45 | 1 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4783.05 | | | 20901.35 | 4 | | |
| 4783.57 | | | 20899.08 | 5 | W | |
| 4784.60 | | | 20894.57 | 4 | | |
| 4784.83 | | | 20893.57 | 4 | | |
| 4786.17 | | | 20887.72 | 2 | H | |
| 4786.37 | | | 20886.85 | 3 | | |
| 4786.51 | | | 20886.20 | 5 | | II - III |
| 4787.76 | | | 20880.78 | 5 | W | II |
| 4789.30 | | | 20874.07 | 5 | | |
| 4790.08 | | | 20870.67 | 2 | H | |
| 4790.19 | | | 20870.19 | 1 | H | IV |
| 4791.17 | | | 20865.89 | 3 | | |
| 4791.30 | | | 20865.36 | 3 | | |
| 4792.56 | | | 20859.86 | 5 | W | II |
| 4793.24 | | | 20856.91 | 3 | | |
| 4793.82 | | | 20854.39 | 5 | W | |
| 4794.49 | | | 20851.44 | 5 | W | III |
| 4795.46 | | | 20847.26 | 5 | W | |
| 4796.37 | | | 20843.30 | 1 | B | I - II |
| 4796.51 | | | 20842.69 | 3 | B | III |
| 4797.05 | | | 20840.35 | 2 | B | III - IV |
| 4797.14 | | | 20839.96 | 1 | B | III - IV |
| 4798.35 | | | 20834.66 | 1 | A | |
| 4799.31 | | | 20830.53 | 4 | | II |
| 4799.71 | | | 20828.80 | 5 | W | |
| 4800.17 | | | 20826.76 | 1 | W | IV |
| 4801.40 | | | 20821.43 | 5 | W | |
| 4802.49 | | | 20816.74 | 5 | W | IV |
| 4803.73 | | | 20811.37 | 0 | H | III - IV |
| 4805.44 | | | 20803.93 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4806.03 | | | 20801.41 | 4 | | |
| 4806.35 | | | 20800.02 | 3 | | |
| 4806.73 | | | 20798.38 | 5 | W | IV |
| 4807.01 | | | 20797.13 | 3 | | I - II |
| 4807.69 | | | 20794.22 | 2 | A | |
| 4807.92 | | | 20793.19 | 1 | | |
| 4808.07 | | | 20792.58 | 5 | W | |
| 4808.35 | | | 20791.33 | 1 | A | |
| 4809.37 | | | 20786.96 | 5 | W | |
| 4809.87 | | | 20784.80 | 4 | | |
| 4810.12 | | | 20783.72 | 5 | A | III - IV |
| 4810.37 | | | 20782.64 | 2 | A | |
| 4810.78 | | | 20780.87 | 3 | A | |
| 4811.81 | | | 20776.41 | 2 | W | |
| 4812.03 | | | 20775.44 | 1 | | |
| 4812.62 | | | 20772.92 | 5 | W | |
| 4813.60 | | | 20768.66 | 0 | | |
| 4814.32 | | | 20765.59 | 2 | | |
| 4814.63 | | | 20764.24 | 1 | | |
| 4815.21 | | | 20761.75 | 2 | | III |
| 4815.56 | | | 20760.24 | 2 | | IV |
| 4816.01 | | | 20758.30 | 4 | | |
| 4816.48 | | | 20756.28 | 5 | | IV |
| 4817.07 | | | 20753.74 | 5 | | II |
| 4817.99 | | | 20749.73 | 5 | B | II |
| 4818.13 | | | 20749.16 | 4 | B | |
| 4819.47 | | | 20743.39 | 2 | | III - IV |
| 4821.15 | | | 20736.13 | 4 | | |
| 4821.62 | | | 20734.15 | 3 | | |
| 4823.26 | | | 20727.06 | 5 | W | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum | |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|----|
| 3 th order | 2 nd order | 1 st order | | | | | |
| 4824.69 | | | 20720.92 | 4 | A | III - IV | |
| 4825.15 | | | 20718.94 | 4 | A | | |
| 4825.74 | | | 20716.44 | 0 | H | | |
| 4826.67 | | | 20712.42 | 4 | | | |
| 4826.96 | | | 20711.21 | 0 | | | |
| 4827.26 | | | 20709.89 | 3 | | | IV |
| 4827.83 | | | 20707.44 | 4 | | | |
| 4828.78 | | | 20703.37 | 4 | | | |
| 4829.15 | | | 20701.81 | 4 | | | |
| 4829.30 | | | 20701.18 | 3 | | | |
| 4829.71 | | | 20699.42 | 2 | | I | |
| 4829.85 | | | 20698.82 | 2 | | | |
| 4830.07 | | | 20697.88 | 3 | H | IV | |
| 4830.87 | | | 20694.45 | 5 | W | III | |
| 4831.08 | | | 20693.55 | 2 | B | | |
| 4832.08 | | | 20689.23 | 5 | W | | |
| 4832.78 | | | 20686.24 | 2 | | IV | |
| 4833.08 | | | 20684.95 | 2 | H | | |
| 4833.57 | | | 20682.89 | 2 | H | IV | |
| 4834.10 | | | 20680.59 | 1 | H | | |
| 4836.60 | | | 20669.90 | 3 | | | |
| 4836.74 | | | 20669.33 | 3 | | | |
| 4838.03 | | | 20663.79 | 5 | | | |
| 4840.87 | | | 20651.70 | 5 | | II | |
| 4841.80 | | | 20647.73 | 1 | B | III | |
| 4841.85 | | | 20647.52 | 1 | B | | |
| 4842.87 | | | 20643.17 | 3 | B | III - IV | |
| 4843.90 | | | 20638.78 | 3 | A | IV | |
| 4844.35 | | | 20636.83 | 5 | W | III | |
| 4847.82 | | | 20622.10 | 3 | | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 4848.03 | | | 20621.17 | 5 | | |
| 4849.30 | | | 20615.80 | 1 | | IV |
| | | 4867.08 | 20540.45 | 1 | | IV |
| | | 4868.81 | 20533.18 | 1 | | III |
| | | 4869.40 | 20530.66 | 3 | | III |
| | | 4870.19 | 20527.34 | 0 | | IV |
| | | 4871.49 | 20521.89 | 1 | | IV |
| | | 4871.94 | 20519.96 | 0 | | III - IV |
| | | 4874.67 | 20508.50 | 0 | | IV |
| | | 4874.96 | 20507.29 | 0 | | IV |
| | | 4876.44 | 20501.03 | 5 | W | II |
| | | 4877.24 | 20497.66 | 0 | | |
| | | 4881.05 | 20481.70 | 1 | | III |
| | | 4883.51 | 20471.35 | 4 | B | II |
| | | 4883.98 | 20469.42 | 3 | B | II |
| | | 4885.17 | 20464.42 | 2 | | IV |
| | | 4885.67 | 20462.33 | 0 | | IV |
| | | 4887.24 | 20455.76 | 4 | | II |
| | | 4889.33 | 20446.98 | 2 | | IV |
| | | 4890.03 | 20444.09 | 3 | | II |
| | | 4890.81 | 20440.82 | 1 | | IV |
| | | 4891.63 | 20437.40 | 0 | | IV |
| | | 4893.32 | 20430.35 | 1 | | III - IV |
| | | 4896.72 | 20416.15 | 3 | | III - IV |
| | | 4901.28 | 20397.16 | 0 | | |
| | | 4902.10 | 20393.72 | 1 | | III - IV |
| | | 4904.69 | 20382.98 | 3 | | IV |
| | | 4905.19 | 20380.90 | 0 | | IV |
| | | 4906.81 | 20374.17 | 2 | | IV |
| | | 4907.19 | 20372.60 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 4910.80 | 20357.62 | 1 | | IV |
| | | 4913.49 | 20346.44 | 1 | | IV |
| | | 4914.89 | 20340.68 | 1 | | III - IV |
| | | 4916.49 | 20334.03 | 0 | | I |
| | | 4918.87 | 20324.22 | 0 | | IV |
| 4919.64 | | | 20321.05 | 2 | | II |
| | | 4920.48 | 20317.58 | 1 | | IV |
| | | 4921.42 | 20313.66 | 5 | | II |
| | | 4922.81 | 20307.95 | 0 | | IV |
| | | 4923.13 | 20306.63 | 0 | | I |
| | | 4924.24 | 20302.02 | 1 | B | IV |
| | | 4924.48 | 20301.07 | 1 | B | IV |
| | | 4925.14 | 20298.35 | 1 | | III - IV |
| | | 4925.83 | 20295.50 | 0 | A | I |
| | | 4926.72 | 20291.83 | 0 | A | |
| | | 4927.51 | 20288.55 | 1 | | III |
| | | 4928.28 | 20285.42 | 1 | | IV |
| | | 4929.33 | 20281.06 | 1 | | IV |
| | | 4933.33 | 20264.65 | 0 | H | |
| | | 4936.90 | 20249.99 | 2 | | III - IV |
| | | 4938.90 | 20241.79 | 0 | | |
| | | 4941.05 | 20232.99 | 2 | | III - IV |
| 4941.58 | | | 20230.82 | 0 | | III - IV |
| | | 4942.96 | 20225.17 | 2 | | III - IV |
| 4946.32 | | | 20211.44 | 0 | | III - IV |
| | | 4948.74 | 20201.55 | 1 | | III |
| | | 4951.78 | 20189.12 | 0 | | |
| | | 4952.53 | 20186.06 | 0 | | IV |
| | | 4954.13 | 20179.57 | 4 | | IV |
| | | 4955.67 | 20173.27 | 1 | | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 4956.42 | 20170.25 | 1 | | IV |
| | | 4959.65 | 20157.11 | 0 | | |
| | | 4963.15 | 20142.89 | 1 | | III - IV |
| | | 4964.94 | 20135.64 | 1 | | II |
| 4971.72 | | | 20108.17 | 0 | | II |
| 4972.69 | | | 20104.25 | 3 | | II |
| | | 4974.74 | 20095.97 | 1 | | |
| | | 4980.26 | 20073.70 | 1 | | III - IV |
| | | 4981.40 | 20069.10 | 0 | | IV |
| | | 4983.17 | 20061.94 | 0 | | |
| 4988.73 | | | 20039.62 | 2 | | II |
| 4991.01 | | | 20030.43 | 0 | | II |
| | | 4992.99 | 20022.48 | 1 | | I |
| | | 4993.97 | 20018.58 | 0 | | II |
| | | 4995.44 | 20012.67 | 1 | | IV |
| | | 4996.10 | 20010.02 | 0 | | |
| | | 4999.19 | 19997.65 | 0 | | IV |
| 5007.80 | | | 19963.31 | 3 | | IV |
| 5008.53 | | | 19960.40 | 0 | | III |
| | | 5009.51 | 19956.46 | 0 | | III - IV |
| 5012.87 | | | 19943.11 | 0 | H | II |
| | | 5014.01 | 19938.55 | 0 | | III - IV |
| | | 5016.33 | 19929.36 | 1 | | IV |
| | | 5018.17 | 19922.05 | 0 | | IV |
| | | 5020.82 | 19911.54 | 1 | | III - IV |
| | | 5021.26 | 19909.79 | 0 | | I |
| | | 5021.94 | 19907.10 | 1 | | III - IV |
| | | 5022.44 | 19905.08 | 0 | | III - IV |
| | | 5023.01 | 19902.85 | 1 | | IV |
| | | 5024.15 | 19898.30 | 1 | | III - IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 5025.73 | 19892.09 | 2 | A | III - IV |
| | | 5029.87 | 19875.71 | 0 | | |
| | | 5032.39 | 19865.76 | 1 | | III - IV |
| | | 5036.01 | 19851.45 | 0 | | |
| | | 5038.62 | 19841.20 | 1 | | I |
| | | 5040.06 | 19835.52 | 0 | B | II |
| | | 5041.40 | 19830.25 | 1 | | III |
| 5044.90 | | | 19816.46 | 2 | | II |
| | | 5047.01 | 19808.18 | 0 | A | |
| | | 5048.26 | 19803.31 | 0 | | |
| 5052.53 | | | 19786.54 | 0 | | II |
| | | 5054.08 | 19780.50 | 0 | | II - III |
| | | 5059.46 | 19759.47 | 0 | H | II - III |
| | | 5066.44 | 19732.25 | 0 | H | I |
| | | 5068.05 | 19725.98 | 0 | H | |
| | | 5069.87 | 19718.90 | 1 | | II |
| | | 5073.58 | 19704.45 | 0 | | |
| | | 5074.24 | 19701.88 | 1 | | III - IV |
| | | 5078.21 | 19686.52 | 2 | | IV |
| 5080.51 | | | 19677.57 | 2 | | II |
| | | 5080.96 | 19675.86 | 2 | | II |
| 5082.40 | | | 19670.25 | 0 | | IV |
| | | 5083.71 | 19665.22 | 1 | | III - IV |
| 5091.85 | | | 19633.78 | 0 | | II |
| | | 5099.26 | 19605.25 | 1 | | IV |
| | | 5099.58 | 19604.02 | 0 | | I - II |
| | | 5100.88 | 19599.02 | 1 | | III - IV |
| | | 5103.03 | 19590.76 | 2 | | IV |
| | | 5104.01 | 19586.97 | 1 | | |
| 5107.33 | | | 19574.24 | 1 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 5108.44 | 19569.99 | 0 | | II |
| | | 5113.30 | 19551.42 | 1 | | |
| | | 5114.53 | 19546.72 | 0 | | III |
| | | 5117.76 | 19534.35 | 0 | | I |
| 5122.30 | | | 19517.07 | 1 | | II |
| 5125.65 | | | 19504.16 | 1 | | II |
| | | 5129.58 | 19489.33 | 0 | | IV |
| | | 5142.98 | 19438.59 | 1 | | III |
| | | 5148.03 | 19419.49 | 0 | | III |
| | | 5148.40 | 19418.12 | 1 | | IV |
| | | 5152.80 | 19401.55 | 0 | | IV |
| 5157.08 | | | 19385.44 | 1 | | IV |
| 5159.08 | | | 19377.92 | 3 | | IV |
| | | 5159.90 | 19374.81 | 1 | | IV |
| | | 5163.08 | 19362.88 | 1 | | III - IV |
| | | 5167.33 | 19346.96 | 1 | | III - IV |
| | | 5174.28 | 19321.00 | 0 | | IV |
| 5178.81 | | | 19304.07 | 1 | | II |
| | | 5183.58 | 19286.31 | 0 | | IV |
| 5184.47 | | | 19283.02 | 1 | | II |
| | | 5185.99 | 19277.34 | 0 | | IV |
| 5187.54 | | | 19270.13 | 1 | | II |
| | | 5190.46 | 19260.78 | 1 | | IV |
| 5191.25 | | | 19257.44 | 2 | | II |
| 5191.98 | | | 19255.14 | 1 | | II |
| | | 5194.92 | 19244.21 | 1 | | II |
| | | 5197.58 | 19234.36 | 1 | | III - IV |
| | | 5198.76 | 19229.99 | 0 | | IV |
| 5201.40 | | | 19220.26 | 0 | | II |
| | | 5201.78 | 19218.83 | 0 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 5203.67 | 19211.88 | 0 | | IV |
| | | 5204.76 | 19207.83 | 1 | | |
| | | 5206.62 | 19201.00 | 1 | | IV |
| | | 5210.85 | 19185.38 | 1 | | |
| | | 5212.58 | 19179.01 | 0 | | IV |
| | | 5216.28 | 19165.44 | 1 | | III - IV |
| | | 5217.83 | 19159.74 | 3 | | IV |
| | | 5221.30 | 19147.01 | 2 | | IV |
| 5223.62 | | | 19138.51 | 1 | | III |
| | | 5226.46 | 19128.11 | 1 | | II |
| | | 5226.85 | 19126.68 | 0 | | II |
| | | 5229.99 | 19115.17 | 0 | | II - III |
| | | 5233.10 | 19103.81 | 1 | | III |
| | | 5233.96 | 19100.70 | 0 | | |
| | | 5234.64 | 19098.22 | 0 | | IV |
| | | 5236.69 | 19090.71 | 1 | | IV |
| 5238.92 | | | 19082.58 | 2 | | III |
| | | 5240.06 | 19078.43 | 0 | | |
| | | 5242.67 | 19068.96 | 0 | | |
| | | 5244.56 | 19062.09 | 0 | | III - IV |
| | | 5246.53 | 19054.94 | 0 | | |
| | | 5247.71 | 19050.65 | 1 | | II |
| | | 5253.46 | 19029.80 | 0 | H | IV |
| | | 5255.65 | 19021.87 | 1 | | III - IV |
| 5256.37 | | | 19019.24 | 1 | | IV |
| | | 5259.81 | 19006.82 | 1 | B | II |
| 5260.19 | | | 19005.42 | 2 | | IV |
| 5260.42 | | | 19004.59 | 2 | | II |
| 5261.94 | | | 18999.10 | 2 | | II |
| | | 5268.28 | 18976.27 | 2 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 5268.85 | 18974.21 | 0 | | III - IV |
| 5270.62 | | | 18967.84 | 0 | | IV |
| | | 5272.62 | 18960.65 | 0 | A | III - IV |
| | | 5282.35 | 18925.72 | 0 | | II |
| | | 5283.56 | 18921.36 | 1 | | III - IV |
| 5284.72 | | | 18917.20 | 0 | | IV |
| | | 5288.78 | 18902.72 | 0 | | III - IV |
| | | 5291.03 | 18894.65 | 0 | | |
| | | 5292.19 | 18890.53 | 5 | W | II |
| | | 5292.92 | 18887.93 | 1 | | III |
| 5309.26 | | | 18829.80 | 2 | | II |
| 5310.06 | | | 18826.96 | 1 | | IV |
| 5310.97 | | | 18823.73 | 0 | | III |
| 5313.74 | | | 18813.89 | 2 | | II |
| | | 5315.08 | 18809.18 | 0 | | |
| | | 5320.71 | 18789.28 | 1 | | IV |
| | | 5322.80 | 18781.90 | 0 | | |
| | | 5325.12 | 18773.69 | 1 | | III - IV |
| | | 5327.74 | 18764.46 | 1 | | I |
| 5332.01 | | | 18749.43 | 1 | | III - IV |
| | | 5339.31 | 18723.82 | 5 | | II |
| | | 5341.31 | 18716.81 | 0 | | |
| | | 5347.17 | 18696.27 | 1 | | III |
| | | 5347.87 | 18693.83 | 1 | | III |
| | | 5351.71 | 18680.44 | 0 | | |
| 5352.92 | | | 18676.22 | 3 | | IV |
| 5363.15 | | | 18640.59 | 0 | | II |
| | | 5364.39 | 18636.29 | 0 | | |
| 5367.02 | | | 18627.09 | 0 | | II |
| 5368.06 | | | 18623.52 | 1 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|--------------------------|--------------------------|--------------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 5369.49 | 18618.56 | 1 | | IV |
| | | 5371.01 | 18613.32 | 1 | | |
| 5372.40 | | | 18608.50 | 3 | | II |
| | | 5372.83 | 18607.01 | 1 | B | III |
| | | 5374.17 | 18602.37 | 1 | | III - IV |
| 5374.97 | | | 18599.60 | 0 | | IV |
| | | 5377.65 | 18590.33 | 0 | | |
| | | 5379.85 | 18582.73 | 0 | | III - IV |
| | | 5384.15 | 18567.89 | 0 | | III |
| | | 5385.62 | 18562.83 | 1 | | III - IV |
| | | 5386.64 | 18559.31 | 1 | | III |
| | | 5387.97 | 18554.72 | 0 | | IV |
| | | 5392.08 | 18540.58 | 2 | | IV |
| 5394.62 | | | 18531.86 | 2 | | IV |
| | | 5395.12 | 18530.14 | 1 | | III - IV |
| 5401.01 | | | 18509.93 | 1 | | III |
| 5413.49 | | | 18467.23 | 0 | | III |
| | | 5415.23 | 18461.33 | 1 | | I - II |
| | | 5416.62 | 18456.56 | 0 | | |
| 5419.15 | | | 18447.97 | 3 | | II |
| | | 5421.49 | 18439.98 | 1 | | IV |
| | | 5423.26 | 18433.96 | 3 | W | IV |
| | | 5425.19 | 18427.41 | 2 | | I - II |
| | | 5428.62 | 18415.79 | 0 | | IV |
| | | 5432.74 | 18401.82 | 1 | | III - IV |
| 5438.94 | | | 18380.82 | 3 | | II |
| | | 5443.33 | 18366.02 | 2 | | III - IV |
| | | 5444.17 | 18363.19 | 1 | | IV |
| | | 5444.94 | 18360.57 | 1 | | II |
| 5445.33 | | | 18359.25 | 0 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 5450.42 | | | 18342.13 | 1 | | II |
| | | 5450.85 | 18340.66 | 1 | | II |
| | | 5453.06 | 18333.25 | 1 | | III |
| | | 5453.81 | 18330.73 | 1 | | III - IV |
| | | 5456.92 | 18320.28 | 2 | | III - IV |
| | | 5458.17 | 18316.09 | 0 | | |
| | | 5460.51 | 18308.21 | 3 | W | II |
| | | 5462.12 | 18302.82 | 0 | | II - III |
| | | 5462.90 | 18300.20 | 1 | | III - IV |
| | | 5465.78 | 18290.56 | 1 | | III - IV |
| | | 5469.48 | 18278.22 | 1 | | II |
| | | 5470.94 | 18273.34 | 0 | | II - III |
| 5472.58 | | | 18267.86 | 2 | | II |
| | | 5473.56 | 18264.59 | 0 | | III - IV |
| | | 5481.19 | 18239.14 | 0 | | |
| | | 5483.83 | 18230.36 | 0 | | III - IV |
| | | 5494.28 | 18195.69 | 1 | | III - IV |
| | | 5494.67 | 18194.39 | 1 | | I - II |
| | | 5499.42 | 18178.70 | 0 | | |
| | | 5503.98 | 18163.65 | 0 | | |
| | | 5507.44 | 18152.23 | 0 | | II |
| | | 5508.74 | 18147.95 | 1 | | I |
| | | 5509.65 | 18144.95 | 0 | | III - IV |
| | | 5510.53 | 18142.06 | 0 | | III |
| | | 5516.01 | 18124.01 | 0 | | |
| | | 5518.08 | 18117.21 | 1 | | III - IV |
| | | 5520.90 | 18107.98 | 1 | | IV |
| 5521.60 | | | 18105.66 | 0 | | IV |
| | | 5524.33 | 18096.73 | 2 | | III |
| | | 5525.44 | 18093.10 | 2 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 5531.03 | | | 18074.79 | 2 | | II |
| | | 5548.05 | 18019.37 | 1 | | III |
| | | 5552.35 | 18005.39 | 0 | | III - IV |
| | | 5552.78 | 18004.02 | 1 | | III |
| | | 5553.46 | 18001.82 | 0 | | IV |
| | | 5554.92 | 17997.08 | 0 | | III |
| | | 5565.83 | 17961.78 | 0 | A | III - IV |
| 5572.17 | | | 17941.37 | 1 | | II |
| | | 5580.31 | 17915.19 | 1 | | III - IV |
| | | 5581.80 | 17910.42 | 1 | | I |
| | | 5583.24 | 17905.79 | 1 | | I |
| | | 5587.14 | 17893.30 | 0 | | |
| | | 5591.53 | 17879.22 | 1 | | I |
| | | 5592.26 | 17876.89 | 1 | | IV |
| | | 5593.31 | 17873.56 | 1 | | III - IV |
| | | 5594.65 | 17869.25 | 0 | | I |
| | | 5596.08 | 17864.69 | 1 | | III - IV |
| | | 5602.83 | 17843.19 | 1 | | III - IV |
| | | 5606.01 | 17833.07 | 1 | | III - IV |
| | | 5609.24 | 17822.77 | 1 | | III - IV |
| 5614.03 | | | 17807.59 | 0 | | IV |
| 5616.67 | | | 17799.20 | 1 | | II |
| | | 5624.62 | 17774.04 | 0 | | |
| | | 5625.71 | 17770.62 | 0 | | III - IV |
| | | 5633.24 | 17746.84 | 1 | | III |
| | | 5639.97 | 17725.69 | 0 | | III - IV |
| | | 5641.26 | 17721.64 | 0 | | III |
| | | 5642.40 | 17718.05 | 0 | | III - IV |
| | | 5646.96 | 17703.75 | 0 | | |
| | | 5653.87 | 17682.09 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 5657.24 | 17671.58 | 0 | H | |
| 5659.37 | | | 17664.91 | 1 | | II |
| | | 5659.92 | 17663.21 | 0 | | II |
| | | 5660.40 | 17661.69 | 1 | | III - IV |
| | | 5661.99 | 17656.75 | 1 | | IV |
| | | 5663.85 | 17650.96 | 0 | | III - IV |
| | | 5666.51 | 17642.67 | 3 | W | III |
| 5667.51 | | | 17639.53 | 2 | | II |
| | | 5670.78 | 17629.36 | 1 | | II |
| | | 5675.12 | 17615.91 | 0 | | II |
| | | 5677.08 | 17609.80 | 2 | | I |
| | | 5685.80 | 17582.82 | 1 | | III - IV |
| | | 5691.31 | 17565.79 | 0 | | |
| | | 5695.89 | 17551.67 | 3 | | IV |
| 5699.60 | | | 17540.24 | 1 | | II |
| | | 5701.24 | 17535.20 | 1 | | III |
| 5705.76 | | | 17521.28 | 0 | | IV |
| | | 5708.42 | 17513.14 | 1 | | III |
| | | 5714.22 | 17495.36 | 0 | | |
| | | 5715.92 | 17490.14 | 1 | | II |
| 5719.58 | | | 17478.95 | 2 | | II |
| | | 5721.58 | 17472.86 | 0 | | III |
| 5726.87 | | | 17456.70 | 2 | | II |
| | | 5730.56 | 17445.45 | 0 | | |
| | | 5734.49 | 17433.50 | 0 | | |
| | | 5739.76 | 17417.50 | 1 | | III - IV |
| | | 5746.42 | 17397.33 | 1 | | III - IV |
| | | 5748.67 | 17390.50 | 1 | | III |
| | | 5749.28 | 17388.66 | 0 | | III - IV |
| 5750.97 | | | 17383.54 | 2 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 5752.24 | | | 17379.73 | 0 | A | IV |
| | | 5753.14 | 17377.01 | 0 | | |
| | | 5754.03 | 17374.33 | 1 | | III |
| 5758.62 | | | 17360.45 | 2 | | II |
| | | 5761.53 | 17351.69 | 0 | | III |
| | | 5761.94 | 17350.45 | 0 | | III |
| | | 5769.55 | 17327.59 | 2 | | I - II |
| 5776.37 | | | 17307.13 | 2 | | II |
| | | 5780.51 | 17294.73 | 0 | | III |
| | | 5789.62 | 17267.52 | 0 | | |
| | | 5790.62 | 17264.54 | 3 | | II |
| | | 5791.72 | 17261.23 | 0 | | I - II |
| | | 5806.08 | 17218.57 | 0 | | |
| | | 5810.58 | 17205.21 | 0 | | III |
| | | 5812.55 | 17199.41 | 0 | | |
| | | 5815.92 | 17189.44 | 1 | | II |
| | | 5826.40 | 17158.52 | 0 | | IV |
| | | 5830.89 | 17145.31 | 1 | | |
| | | 5834.96 | 17133.35 | 1 | | I |
| | | 5853.81 | 17078.15 | 1 | | III - IV |
| | | 5857.55 | 17067.27 | 1 | | III |
| | | 5859.40 | 17061.86 | 1 | | II |
| | | 5868.92 | 17034.18 | 0 | | IV |
| | | 5872.60 | 17023.53 | 0 | | |
| | | 5876.62 | 17011.89 | 0 | | I |
| | | 5883.01 | 16993.39 | 0 | | IV |
| 5893.28 | | | 16963.80 | 2 | | II |
| 5905.17 | | | 16929.62 | 1 | | II |
| 5945.49 | | | 16814.81 | 2 | | II |
| 5955.67 | | | 16786.07 | 0 | A | IV |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 5971.12 | | | 16742.66 | 1 | | II |
| 5976.44 | | | 16727.75 | 3 | | II |
| 6008.85 | | | 16637.42 | 0 | | II |
| | | 6024.53 | 16594.23 | 0 | H | I |
| | | 6026.51 | 16588.78 | 0 | A | |
| 6036.17 | | | 16562.23 | 2 | | II |
| | | 6046.05 | 16535.17 | 1 | | |
| | | 6048.46 | 16528.58 | 0 | | I - II |
| 6051.12 | | | 16521.31 | 3 | | II |
| | | 6089.58 | 16416.94 | 2 | | III - IV |
| 6093.37 | | | 16406.74 | 1 | | II - III |
| | | 6094.67 | 16403.26 | 1 | | |
| 6097.56 | | | 16395.48 | 3 | | II |
| 6101.37 | | | 16385.22 | 1 | | II |
| | | 6110.35 | 16361.14 | 1 | | III |
| | | 6111.78 | 16357.34 | 0 | B | I |
| | | 6111.90 | 16356.99 | 0 | B | I |
| 6115.08 | | | 16348.51 | 0 | | III |
| | | 6118.12 | 16340.39 | 1 | | III - IV |
| | | 6119.49 | 16336.73 | 1 | | III |
| | | 6124.26 | 16324.00 | 1 | | III - IV |
| | | 6125.71 | 16320.12 | 0 | | |
| | | 6127.42 | 16315.58 | 0 | A | II |
| | | 6129.10 | 16311.11 | 1 | | III - IV |
| | | 6137.55 | 16288.66 | 0 | | I - II |
| | | 6143.26 | 16273.49 | 0 | A | |
| | | 6146.40 | 16265.18 | 1 | | II |
| | | 6149.44 | 16257.14 | 3 | | II |
| | | 6157.12 | 16236.89 | 0 | | IV |
| | | 6165.94 | 16213.64 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 6174.42 | 16191.39 | 0 | | |
| | | 6176.15 | 16186.85 | 1 | | III |
| | | 6179.39 | 16178.37 | 1 | | III - IV |
| | | 6184.56 | 16164.84 | 1 | | II |
| | | 6185.01 | 16163.65 | 1 | | II |
| | | 6186.44 | 16159.93 | 1 | | III |
| | | 6194.08 | 16140.00 | 3 | | II |
| | | 6195.94 | 16135.15 | 0 | | IV |
| | | 6196.42 | 16133.88 | 0 | | |
| | | 6203.81 | 16114.66 | 0 | | III |
| | | 6205.96 | 16109.10 | 3 | | III |
| | | 6208.90 | 16101.47 | 0 | | III |
| | | 6219.21 | 16074.78 | 0 | | |
| | | 6221.64 | 16068.51 | 2 | | III |
| | | 6233.60 | 16037.68 | 1 | | III |
| | | 6233.99 | 16036.67 | 0 | H | |
| | | 6236.31 | 16030.70 | 0 | A | |
| | | 6238.19 | 16025.88 | 3 | | III |
| | | 6240.33 | 16020.38 | 0 | H | |
| | | 6259.05 | 15972.47 | 3 | | III |
| | | 6260.10 | 15969.79 | 0 | | III |
| | | 6268.33 | 15948.82 | 0 | | III |
| | | 6270.78 | 15942.59 | 4 | | II |
| | | 6273.33 | 15936.09 | 1 | | III |
| | | 6275.94 | 15929.46 | 0 | A | |
| 6277.46 | | | 15925.60 | 3 | | II |
| | | 6281.24 | 15916.02 | 1 | | IV |
| | | 6283.74 | 15909.68 | 1 | | III |
| | | 6284.37 | 15908.09 | 2 | | III |
| | | 6286.96 | 15901.56 | 1 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 6287.67 | 15899.76 | 1 | | III |
| | | 6292.30 | 15888.07 | 2 | | III |
| | | 6296.90 | 15876.43 | 0 | | |
| | | 6298.26 | 15873.03 | 1 | | II |
| 6300.81 | | | 15866.60 | 1 | | II |
| | | 6305.06 | 15855.91 | 0 | | II |
| | | 6309.46 | 15844.83 | 0 | | |
| | | 6311.31 | 15840.21 | 1 | | II - III |
| | | 6315.65 | 15829.32 | 0 | B | |
| | | 6324.53 | 15807.08 | 0 | | |
| 6330.92 | | | 15791.12 | 0 | | III |
| 6333.90 | | | 15783.69 | 0 | | III |
| | | 6339.58 | 15769.55 | 0 | | |
| | | 6341.26 | 15765.37 | 1 | | III |
| 6343.92 | | | 15758.78 | 3 | | II |
| | | 6344.62 | 15757.05 | 0 | | |
| | | 6345.49 | 15754.88 | 1 | | III |
| | | 6348.69 | 15746.93 | 3 | A | III |
| | | 6353.08 | 15736.06 | 0 | | II |
| 6356.31 | | | 15728.04 | 1 | | II |
| | | 6359.46 | 15720.26 | 2 | | III |
| | | 6361.26 | 15715.81 | 0 | | |
| | | 6366.74 | 15702.28 | 1 | | III |
| | | 6369.31 | 15695.96 | 0 | | III |
| 6369.94 | | | 15694.41 | 1 | | III |
| 6375.26 | | | 15681.30 | 1 | | II |
| | | 6377.58 | 15675.61 | 2 | | III |
| | | 6383.28 | 15661.62 | 1 | | |
| | | 6386.33 | 15654.13 | 1 | | III |
| | | 6396.76 | 15628.59 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum | |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|----------|
| 3 th order | 2 nd order | 1 st order | | | | | |
| 6297.96 | | | 15625.66 | 0 | | II | |
| | | | 15602.34 | 0 | | III - IV | |
| | | | 15597.11 | 0 | | III | |
| | | | 15591.27 | 0 | | III | |
| | | | 15575.60 | 1 | | II | |
| | | | 15566.17 | 0 | | III | |
| | | | 15546.13 | 1 | | IV | |
| | | | 15523.31 | 0 | | III | |
| | | | 15513.29 | 1 | | III | |
| | | | 15507.64 | 1 | | III | |
| | | | 15500.29 | 0 | | III | |
| | 6449.71 | | | 15494.40 | 0 | | II - III |
| | | | | 15488.71 | 0 | | |
| | | | 15484.96 | 1 | | III | |
| | | | 15480.51 | 2 | | II - III | |
| | | | 15476.72 | 0 | | III | |
| | | | 15473.35 | 1 | | IV | |
| | | | 15470.37 | 1 | | III | |
| | | | 15466.40 | 0 | H | | |
| | | | 15457.43 | 1 | | IV | |
| | | | 15443.75 | 0 | | | |
| | | | 15440.58 | 1 | | IV | |
| | | | 15428.64 | 0 | | II | |
| | | | 15416.46 | 1 | | III | |
| | | 15405.74 | 2 | | IV | | |
| 6501.08 | | | 15396.16 | 0 | | | |
| | | | 15382.89 | 1 | | I | |
| | | | 15377.81 | 0 | | III | |
| | | | 15374.52 | 0 | | | |
| | | | 15372.87 | 0 | | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 6504.30 | 15370.22 | 1 | | II |
| | | 6510.06 | 15356.59 | 0 | | |
| | | 6512.28 | 15351.38 | 0 | | II |
| 6512.78 | | | 15350.20 | 3 | | II |
| | | 6513.62 | 15348.20 | 1 | | III |
| | | 6523.26 | 15325.54 | 2 | | III |
| 6528.62 | | | 15312.96 | 2 | | II |
| 6530.17 | | | 15309.32 | 1 | | III |
| | | 6531.99 | 15305.04 | 1 | | III |
| | | 6536.33 | 15294.88 | 0 | | II - III |
| | | 6541.47 | 15282.86 | 1 | | III |
| | | 6545.58 | 15273.28 | 4 | W | III |
| | | 6546.92 | 15270.16 | 1 | | III |
| | | 6549.35 | 15264.47 | 2 | | III |
| | | 6551.83 | 15258.71 | 2 | | III |
| | | 6552.67 | 15256.74 | 1 | | I |
| | | 6556.35 | 15248.17 | 1 | B | III |
| | | 6556.69 | 15247.40 | 1 | B | II |
| | | 6562.80 | 15233.21 | 5 | W | III |
| | | 6569.01 | 15218.81 | 0 | | II |
| | | 6573.62 | 15208.13 | 1 | | II |
| | | 6576.10 | 15202.38 | 1 | | III |
| | | 6576.40 | 15201.70 | 1 | | III |
| | | 6584.60 | 15182.76 | 1 | | III |
| 6585.26 | | | 15181.25 | 0 | | III |
| | | 6586.60 | 15178.16 | 0 | | |
| 6591.92 | | | 15165.91 | 2 | | III |
| 6594.96 | | | 15158.91 | 3 | | II |
| 6597.22 | | | 15153.71 | 2 | | II |
| 6598.81 | | | 15150.08 | 1 | | II |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 6608.30 | 15128.32 | 0 | | II - III |
| | | 6610.56 | 15123.15 | 2 | | IV |
| | | 6611.28 | 15121.49 | 2 | | III |
| | | 6612.76 | 15118.12 | 2 | | III |
| | | 6614.49 | 15114.16 | 1 | | III |
| | | 6615.38 | 15112.11 | 0 | | III |
| | | 6618.35 | 15105.35 | 1 | | II |
| 6619.33 | | | 15103.11 | 3 | | II |
| 6619.99 | | | 15101.59 | 2 | | II |
| | | 6622.88 | 15095.00 | 1 | | III |
| 6625.46 | | | 15089.14 | 1 | | III |
| | | 6633.83 | 15070.08 | 1 | | II |
| 6638.35 | | | 15059.84 | 1 | | III |
| | | 6638.60 | 15059.26 | 1 | B | III |
| | | 6641.01 | 15053.81 | 1 | | IV |
| | | 6646.85 | 15040.57 | 0 | | |
| | | 6649.81 | 15033.87 | 0 | A | |
| | | 6653.47 | 15025.60 | 1 | | IV |
| | | 6653.85 | 15024.74 | 0 | B | IV |
| | | 6654.03 | 15024.35 | 0 | B | IV |
| | | 6656.17 | 15019.50 | 3 | | III |
| | | 6657.74 | 15015.96 | 0 | | III |
| | | 6661.65 | 15007.17 | 3 | | III |
| | | 6665.55 | 14998.39 | 1 | | III |
| | | 6669.38 | 14989.75 | 0 | | III |
| 6669.99 | | | 14988.38 | 3 | | III |
| | | 6676.99 | 14972.69 | 1 | | IV |
| 6694.26 | | | 14934.05 | 3 | | II |
| 6694.96 | | | 14932.50 | 3 | | III |
| | | 6697.65 | 14926.49 | 0 | | |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| | | 6698.81 | 14923.92 | 1 | | III |
| 6702.21 | | | 14916.33 | 1 | | II |
| | | 6703.44 | 14913.61 | 1 | B | III |
| 6703.87 | | | 14912.64 | 3 | | III |
| | | 6710.60 | 14897.68 | 0 | | |
| 6714.38 | | | 14889.29 | 2 | | III |
| 6716.06 | | | 14885.59 | 0 | | III |
| 6722.74 | | | 14870.78 | 1 | | III |
| | | 6723.90 | 14868.21 | 4 | W | III |
| | | 6727.99 | 14859.18 | 0 | | I |
| 6733.87 | | | 14846.22 | 3 | | III |
| | | 6735.28 | 14843.09 | 0 | H | III - IV |
| 6739.28 | | | 14834.30 | 2 | | III |
| | | 6740.72 | 14831.11 | 0 | H | |
| | | 6743.42 | 14825.18 | 0 | | |
| | | 6747.78 | 14815.62 | 0 | | III |
| | | 6759.44 | 14790.04 | 0 | H | |
| | | 6760.51 | 14787.70 | 0 | H | |
| | | 6765.26 | 14777.32 | 2 | | III |
| 6767.94 | | | 14771.47 | 0 | | III |
| | | 6776.03 | 14753.85 | 0 | | |
| 6780.40 | | | 14744.34 | 4 | A | III |
| | | 6782.83 | 14739.04 | 0 | | IV |
| | | 6784.67 | 14735.04 | 0 | | |
| | | 6787.55 | 14728.81 | 1 | B | IV |
| 6788.60 | | | 14726.51 | 1 | | II |
| | | 6789.49 | 14724.58 | 1 | | III |
| 6790.37 | | | 14722.69 | 1 | | II |
| | | 6791.44 | 14720.35 | 2 | | III - IV |
| | | 6798.76 | 14704.52 | 1 | | III |

| Wavelength, air (Å) | | | Wavenumber (cm ⁻¹) | In- ten- sity | Type of line | Spectrum |
|-----------------------|-----------------------|-----------------------|-----------------------------------|---------------------|--------------------|----------|
| 3 th order | 2 nd order | 1 st order | | | | |
| 6799.47 | | | 14702.97 | 1 | | III |
| | | 6800.65 | 14700.42 | 2 | | III - IV |
| 6805.69 | | | 14689.53 | 3 | | II |
| | | 6815.76 | 14667.85 | 0 | H | |
| | | 6826.81 | 14644.09 | 0 | | |
| 6847.83 | | | 14599.14 | 0 | | III |
| | | 6850.12 | 14594.27 | 2 | | |
| | | 6851.74 | 14590.80 | 1 | | III |
| | | 6858.44 | 14576.55 | 0 | | |
| | | 6869.17 | 14553.80 | 0 | | |
| | | 6870.40 | 14551.19 | 0 | | IV |
| | | 6873.33 | 14544.97 | 0 | H | |
| | | 6886.71 | 14516.73 | 1 | | |
| | | 6895.69 | 14497.83 | 0 | | |
| 6910.24 | | | 14467.28 | 0 | | II |
| | | 6918.74 | 14449.53 | 0 | | |