**Table I.** Full assignments of the SVLF spectra for excitation of hot bands: $47^1_1$, $47^1_0 48^0_1$, $46^1_0 48^0_1$, $45^1_0 48^0_1$, and $44^1_0 48^0_1$.

| $47^1_1$ (−21 cm$^{-1}$) | | $47^1_0 48^0_1$ (+24 cm$^{-1}$) | | $46^1_0 48^0_1$ (+84 cm$^{-1}$) | | $45^1_0 48^0_1$ (+158 cm$^{-1}$) | | $44^1_0 48^0_1$ (+232 cm$^{-1}$) | |
|---|---|---|---|---|---|---|---|---|---|
| Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment |
| –45 | $47^1_0 48^0_1$ | 0 | $47^1_0 48^0_1$ | 0 | $46^1_0 48^0_1$ | 0 | $45^1_0 48^0_1$ | 0 | $44^1_0 48^0_1$ |
| 0 | $47^1_1$ | 46 | $47^1_1$ | 46 | $46^1_0 47^0_1$ | 45 | $45^1_0 47^0_1$ | 136 | ? |
| 50 | $47^1_0 48^0_3$ | 67 | ? | 67 | ? | 95 | $45^1_0 48^0_3$ | 175 | $44^1_0 47^0_2 48^0_1$ |
| 63 | $33^0_1 47^1_0 48^0_1$ | 97 | $47^1_0 48^0_3$ | 96 | $46^1_0 48^0_3$ | 108 | $33^0_1 45^1_0 48^0_1$ | 196 | $44^1_0 46^0_1$ |
| 89 | $47^1_1 48^0_2$ | 109 | $33^0_1 47^1_0 48^0_1$ | 108 | $33^0_1 46^1_0 48^0_1$ | 140 | $45^1_0 47^0_1 48^0_2$ | 236 | ? |
| 136 | $47^1_2 48^0_1$ | 135 | $47^1_1 48^0_2$ | 140 | $46^1_0 47^0_1 48^0_2$ | 174 | $45^1_0 47^0_2 48^0_1$ | 255 | ? |
| 151 | $46^0_1 47^1_0$ | 182 | $47^1_2 48^0_1$ | 174 | $46^1_0 47^0_2 48^0_1$ | 196 | $45^1_0 46^0_1$ | 281 | $44^1_0 46^0_1 48^0_2$ |
| 231 | $47^1_2 48^0_3, 32^0_1 47^1_1$ | 196 | $46^0_1 47^1_0$ | 197 | $46^1_1$ | 231 | $45^1_0 47^0_1 48^0_4$, | 326 | $44^1_0 46^0_1 47^0_1 48^0_1$ |
| 280 | $46^0_1 47^1_1 48^0_1$ | 277 | $47^1_2 48^0_3, 32^0_1 47^1_1$ | 239 | $46^1_0 47^0_1 48^0_4$ | | $32^0_1 45^1_0 48^0_1$ | 363 | $44^1_1$ |
| 374 | $46^0_1 47^1_1 48^0_3$, | 326 | $46^0_1 47^1_1 48^0_1$ | 278 | $46^1_0 47^0_2 48^0_3$ | 275 | $45^1_0 47^0_2 48^0_3$ | 384 | ? |
| | $31^0_1 47^1_1$ | 419 | $46^0_1 47^1_1 48^0_3$, | 287 | $46^1_1 48^0_2$ | 284 | $45^1_0 46^0_1 48^0_2$ | 452 | $44^1_1 48^0_2$ |
| 480 | $46^0_2 47^1_1, 30^0_1 47^1_1$ | | $31^0_1 47^1_1$ | 329 | $46^1_1 47^0_1 48^0_1$ | 327 | $45^1_0 46^0_1 47^0_1 48^0_1$ | 596 | $32^0_1 44^1_1$ |
| 580 | $28^0_1 47^1_0 48^0_1$ | 526 | $46^0_2 47^1_1, 30^0_1 47^1_1$ | 374 | $46^1_1 48^0_4$, | 355 | $45^1_1$ | 987 | $28^0_1 44^1_1$ |
| 604 | $31^0_1 32^0_1 47^1_1$ | 626 | $28^0_1 47^1_0 48^0_1$ | | $31^0_1 46^1_0 48^0_1$ | 377 | $45^1_0 46^0_1 48^0_4$ | 1215 | $26^0_1 44^1_1$ |
| 625 | $28^0_1 47^1_1$ | 651 | $31^0_1 32^0_1 47^1_1$ | 424 | ? | 423 | $45^1_0 46^0_1 47^0_1 48^0_3$ | 1268 | $28^0_1 44^1_1 46^0_1 48^0_1$ |
| 689 | $28^0_1 33^0_1 47^1_0 48^0_1$ | 671 | $28^0_1 47^1_1$ | 481 | $46^1_2 48^0_1$, | 448 | $45^1_1 48^0_2$ | 1338 | ? |
| 760 | $45^0_2 47^1_0 48^0_1$ | 735 | $28^0_1 33^0_1 47^1_0 48^0_1$ | | $30^0_1 46^1_0 48^0_1$ | 462 | $32^0_2 45^1_0 48^0_1$ | 1377 | $25^0_1 44^1_1$ |
| 796 | $45^0_2 47^1_1$ | 807 | $45^0_2 47^1_0 48^0_1$, | 515 | $46^1_2 47^0_1$ | 476 | $45^1_0 46^0_2 48^0_1$ | | |
| 807 | $26^0_1 47^1_0 48^0_1$ | | $28^0_1 47^1_2 48^0_1$ | 570 | $46^1_2 48^0_3, 31^0_1 46^1_1$ | 491 | $45^1_1 47^0_1 48^0_1$ | | |
| 853 | $26^0_1 47^1_1$ | 853 | $26^0_1 47^1_0 48^0_1$ | 625 | $28^0_1 46^1_0 48^0_1$ | 515 | $45^1_0 46^0_2 47^0_1$ | | |
| 967 | $25^0_1 47^1_0 48^0_1$ | 899 | $26^0_1 47^1_1$ | 651 | ? | 568 | $45^1_0 46^0_2 48^0_3$ | | |
| 1013 | $25^0_1 47^1_1$ | 1012 | $25^0_1 47^1_0 48^0_1$ | 670 | $46^1_3, 28^0_1 46^1_0 47^0_1$ | 572 | $45^1_1 47^0_1 48^0_3$ | | |
| 1049 | $23^0_1 47^1_1$ | 1038 | ? | 721 | $45^0_1 46^1_1 48^0_3$, | 587 | ? | | |
| 1174 | $19^0_1 47^1_0 48^0_1$ | 1058 | $25^0_1 47^1_1$ | | $28^0_1 46^1_0 48^0_3$ | 624 | $28^0_1 45^1_0 48^0_1$ | | |
| 1220 | $19^0_1 47^1_1$ | 1095 | $23^0_1 47^1_1$ | 765 | $28^0_1 46^1_0 47^0_1 48^0_2$ | 677 | $45^1_0 46^0_3$ | | |
| 1284 | $18^0_1 47^1_1$ | 1195 | ? | 799 | $45^0_2 46^1_0 48^0_1$ | 765 | $45^1_0 46^0_3 48^0_2$ | | |
| 1315 | $17^0_1 47^1_1$ | 1220 | $19^0_1 47^1_0 48^0_1$ | 821 | $28^0_1 46^1_1$ | 797 | $45^1_2 48^0_1$ | | |

| | |
|---|---|
| 1243 | ? |
| 1267 | $19_1^0 47_1^1$ |
| 1330 | $18_1^0 47_1^1$ |
| 1361 | $17_1^0 47_1^1$ |
| 1397 | ? |

| | |
|---|---|
| 852 | $45_2^0 46_0^1 47_1^0$, |
| | $26_1^0 46_0^1 48_1^0$ |
| 899 | $26_1^0 46_0^1 47_1^0$ |
| 924 | ? |
| 947 | $26_1^0 46_0^1 48_3^0$ |
| 995 | ? |
| 1013 | $25_1^0 46_0^1 48_1^0$ |
| 1049 | $26_1^0 46_1^1$ |
| 1058 | $25_1^0 46_0^1 47_1^0$ |
| 1109 | $25_1^0 46_0^1 48_3^0$ |
| 1154 | $25_1^0 46_0^1 47_1^0 48_2^0$ |
| 1195 | $20_1^0 46_0^1 48_1^0$ |
| 1210 | $25_1^0 46_1^1$ |
| 1220 | $19_1^0 46_0^1 48_1^0$ |
| 1266 | ? |
| 1285 | $18_1^0 46_0^1 48_1^0$ |
| 1319 | $17_1^0 46_0^1 48_1^0$ |
| 1331 | $18_1^0 46_0^1 47_1^0$ |
| 1363 | ? |
| 1394 | $18_1^0 33_1^0 46_0^1 48_1^0$ |
| 1419 | $18_1^0 46_1^1$ |

| | |
|---|---|
| 820 | $28_1^0 45_0^1 46_1^0$ |
| 853 | $45_2^1 47_1^0$, |
| | $26_1^0 45_0^1 48_1^0$ |
| 910 | $26_1^0 45_0^1 46_1^0 48_2^0$ |
| 981 | $25_1^0 45_1^1$ |
| 1012 | $25_1^0 45_0^1 48_1^0$ |
| 1049 | $26_1^0 45_0^1 46_1^0$ |
| 1209 | $25_1^0 45_0^1 46_1^0$ |
| 1244 | $23_1^0 45_0^1 46_1^0$ |
| 1369 | $25_1^0 45_1^1$ |
| 1417 | $19_1^0 45_0^1 46_1^0$ |
| 1481 | $18_1^0 45_0^1 46_1^0$ |

**Table II.** Full assignments of the SVLF spectra for excitation of the $33^1_0$, $47^2_0$, $46^1_0 47^1_0$, $32^1_0$ and $46^2_0$ bands.

| $33^1_0$ (+104 cm$^{-1}$) | | $47^2_0$ (+131 cm$^{-1}$) | | $46^1_0 47^1_0$ (+191 cm$^{-1}$) | | $32^1_0$ (+222 cm$^{-1}$) | | $46^2_0$ (+254 cm$^{-1}$) | |
|---|---|---|---|---|---|---|---|---|---|
| Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment |
| 0 | $33^1_0$ | 0 | $47^2_0$ | 0 | $46^1_0 47^1_0$ | 0 | $32^1_0$ | 0 | $46^2_0$ |
| 90 | $33^1_0 48^0_2$ | 89 | $47^2_0 48^0_2$ | 89 | $46^1_0 47^1_0 48^0_2$ | 89 | $32^1_0 48^0_2$ | 89 | $46^2_0 48^0_2$ |
| 106 | $33^1_1$ | 104 | $33^1_0 47^2_0$ | 106 | $33^0_1 46^1_0 47^1_0$ | 133 | $32^1_0 47^0_1 48^0_1$ | 132 | $46^2_0 47^0_1 48^0_1$ |
| 134 | $33^1_0 47^0_1 48^0_1$ | 132 | $47^2_1 48^0_1$ | 133 | $46^1_0 47^1_1 48^0_1$ | 231 | $32^1_1$ | 175 | $46^2_0 47^0_2$ |
| 186 | $33^1_0 48^0_4$ | 153 | ? | 154 | ? | 279 | $32^1_0 46^0_1 48^0_1$ | 202 | $46^2_0 48^0_4$, |
| 338 | $33^1_1 32^0_1$ | 175 | $47^2_2$ | 175 | $46^1_0 47^1_2$ | 319 | $32^1_1 48^0_2$ | | $33^0_1 46^2_0 48^0_2$ |
| 480 | $30^0_1 33^1_0$, $33^1_1 31^0_1$ | 201 | $47^2_0 48^0_4$, | 202 | $46^1_0 47^1_0 48^0_4$, | 363 | $32^1_1 47^0_1 48^0_1$ | 231 | $46^2_0 47^0_1 48^0_3$, |
| 713 | $28^0_1 33^1_0 48^0_2$ | | $33^0_1 47^2_0 48^0_2$ | | $33^0_1 46^1_0 47^1_0 48^0_2$ | 372 | $31^0_1 32^1_0$ | | $32^0_1 46^2_0$ |
| 731 | $28^0_1 33^1_1$ | 211 | ? | 231 | $46^1_0 47^1_1 48^0_3$ | 461 | $32^1_2$ | 241 | $33^0_1 46^2_0 48^0_1$ |
| 959 | $26^0_1 33^1_1$ | 231 | $47^2_1 48^0_3$ | 241 | $33^0_1 46^1_0 47^1_1 48^0_1$ | 471 | ? | 275 | $46^2_0 47^0_2 48^0_2$ |
| 1101 | $25^0_1 33^1_0 48^0_2$ | 241 | $33^0_1 47^2_1 48^0_1$ | 275 | $46^1_0 47^1_2 48^0_2$ | 551 | $32^1_2 48^0_2$ | 279 | $46^2_1 48^0_1$ |
| 1119 | $25^0_1 33^1_1$ | 278 | $46^0_1 47^2_0 48^0_1$ | 280 | $46^1_1 47^1_0 48^0_1$ | 593 | ? | 303 | $46^2_0 47^0_3 48^0_1$ |
| 1147 | $25^0_1 33^1_0 47^0_1 48^0_1$ | 314 | $47^2_3 48^0_1$ | 304 | $46^1_0 47^1_3 48^0_1$ | 603 | $31^0_1 32^1_1$ | 325 | $46^2_1 47^0_1$ |
| 1156 | ? | 325 | $46^0_1 47^2_1$ | 314 | $46^1_0 47^1_3 48^0_1$ | 623 | $28^0_1 32^1_0$ | 355 | $46^2_0 47^0_2 48^0_4$ |
| 1199 | $25^0_1 33^1_0 48^0_4$ | 390 | $33^0_1 46^0_1 47^2_0 48^0_1$ | 325 | $46^1_1 47^1_1$ | 691 | $32^1_3$ | | $46^2_0 47^0_4$ |
| 1301 | $19^0_1 33^1_0 48^0_2$ | 407 | $33^0_1 47^2_3 48^0_1$ | 343 | $33^0_1 46^1_0 47^1_1 48^0_1$ | 711 | $28^0_1 32^1_0 48^0_2$ | 367 | ? |
| 1326 | $19^0_1 33^1_1$ | 461 | $46^0_1 47^2_2 48^0_1$ | 356 | $46^1_0 47^1_2 48^0_4$, | 834 | $31^0_1 32^1_2$ | 375 | $46^2_1 48^0_3$, $31^0_1 46^2_0$ |
| 1352 | $19^0_1 33^1_0 47^0_1 48^0_1$ | 549 | $31^0_1 47^2_2$ | | $46^1_0 47^1_4$ | 856 | $28^0_1 32^1_1$ | 390 | $33^0_1 46^2_1 48^0_1$ |
| 1391 | $18^0_1 33^1_1$ | 758 | $46^0_3 47^2_0 48^0_1$, | 374 | $46^1_1 47^1_0 48^0_3$, | 904 | $28^0_1 32^1_0 46^0_1 48^0_1$ | 419 | $46^2_1 47^0_1 48^0_2$ |
| 1421 | $17^0_1 33^1_1$ | | $28^0_1 47^2_1 48^0_1$ | | $31^0_1 46^1_0 47^1_0$ | 944 | $28^0_1 32^1_1 48^0_2$ | 462 | $46^2_1 47^0_2 48^0_1$, |
| | | 800 | $46^0_3 47^2_1$, $28^0_1 47^2_2$ | 388 | $33^0_1 46^1_1 47^1_0 48^0_1$ | 988 | $28^0_1 32^1_1 47^0_1 48^0_1$ | | $32^0_2 46^2_0$ |
| | | 941 | $26^0_1 47^2_0 48^0_2$ | 407 | $33^0_1 46^1_0 47^1_3 48^0_1$ | 1011 | $25^0_1 32^1_0$ | 477 | $46^2_2$ |
| | | 986 | $26^0_1 47^2_1 48^0_1$ | 426 | ? | 1083 | $28^0_1 32^1_2$, | 507 | $31^0_1 46^2_0 47^0_1 48^0_1$ |
| | | 1029 | $26^0_1 47^2_2$ | 462 | $33^0_1 46^1_0 47^1_4$ | | $26^0_1 32^1_1$ | 563 | $46^2_2 48^0_2$ |
| | | 1101 | $25^0_1 47^2_0 48^0_2$ | 476 | $46^1_2 47^1_0$ | 1100 | $25^0_1 32^1_0 48^0_2$ | 649 | $46^2_2 48^0_4$ |
| | | 1145 | $25^0_1 47^2_1 48^0_1$ | 507 | $31^0_1 46^1_0 47^1_1 48^0_1$ | 1172 | $26^0_1 32^1_0 48^0_2$ | 653 | $46^2_2 47^0_2$ |
| | | 1188 | $25^0_1 47^2_2$ | 554 | $33^0_1 46^1_0 47^1_4 48^0_2$ | 1244 | $25^0_1 32^1_1$ | 713 | $28^0_1 46^2_0 48^0_2$ |

| | |
|---|---|
| 1215 | $25_1^0 33_1^0 47_0^2 48_2^0$ |
| 1224 | $23_1^0 47_2^2$ |
| 1328 | $23_1^0 46_1^0 47_0^2 48_1^0$ |
| 1352 | $19_1^0 47_1^2 48_1^0$ |
| 1396 | $19_1^0 47_2^2$ |
| 1420 | $17_1^0 33_1^0 47_0^2$ |
| 1460 | $18_1^0 47_2^2$ |

| | |
|---|---|
| 564 | $46_2^1 47_0^1 48_2^0$ |
| 648 | $46_2^1 47_0^1 48_4^0$ |
| 655 | $46_2^1 47_2^1$ |
| 714 | $28_1^0 46_0^1 47_0^1 48_2^0$ |
| 730 | ? |
| 758 | $46_3^1 47_0^1 48_1^0$, |
| | $28_1^0 46_0^1 47_1^1 48_1^0$ |
| 800 | $46_3^1 47_1^1$, |
| | $28_1^0 46_0^1 47_2^1$ |
| 904 | $28_1^0 46_1^1 47_0^1 48_1^0$ |
| 950 | $28_1^0 46_1^1 47_1^1$ |
| 1029 | $26_1^0 46_0^1 47_2^1$ |
| 1053 | $26_1^0 33_1^0 46_0^1 47_0^1 48_2^0$ |
| 1102 | $25_1^0 46_0^1 47_0^1 48_2^0$ |
| 1132 | $26_1^0 46_1^1 47_0^1 48_1^0$ |
| 1146 | ? |
| 1188 | $25_1^0 46_0^1 47_2^1$ |
| 1215 | $25_1^0 33_1^0 46_0^1 47_0^1 48_2^0$ |
| 1292 | $25_1^0 33_1^0 46_0^1 47_2^1$ |
| 1328 | $23_1^0 46_1^1 47_0^1 48_1^0$ |
| 1339 | $25_1^0 46_1^1 47_1^1$ |
| 1373 | $23_1^0 46_1^1 47_1^1$ |
| 1397 | $19_1^0 46_0^1 47_2^1$ |
| 1422 | $17_1^0 33_1^0 46_0^1 47_0^1$ |
| 1460 | $18_1^0 46_0^1 47_2^1$ |
| 1498 | $17_1^0 46_0^1 47_2^1$ |

| | |
|---|---|
| 1282 | $18_1^0 32_0^1$ |
| 1314 | $17_1^0 32_0^1$, |
| | $26_1^0 32_2^1$ |
| 1332 | $25_1^0 32_1^1 48_2^0$ |
| 1427 | ? |
| 1451 | $19_1^0 32_1^1$ |
| 1476 | $25_1^0 32_2^1$ |
| 1516 | $18_1^0 32_1^1$ |

| | |
|---|---|
| 759 | $46_3^2 48_1^0$, |
| | $28_1^0 46_0^2 47_1^0 48_1^0$ |
| 800 | $46_3^2 47_1^0$, |
| | $28_1^0 46_0^2 47_2^0$ |
| 857 | $28_1^0 32_1^0 46_0^2$ |
| 904 | $28_1^0 46_1^2 48_1^0$ |
| 949 | $28_1^0 46_1^2 47_1^0$ |
| 1006 | ? |
| 1101 | $25_1^0 46_0^2 48_2^0$ |
| 1133 | $26_1^0 46_1^2 48_1^0$ |
| 1144 | $25_1^0 46_0^2 47_1^0 48_1^0$ |
| 1187 | $25_1^0 46_0^2 47_2^0$ |
| 1244 | $25_1^0 32_1^0 46_0^2$ |
| 1254 | $25_1^0 33_1^0 46_0^2 47_1^0 48_1^0$ |
| 1292 | $25_1^0 46_1^2 48_1^0$ |
| 1308 | ? |
| 1329 | $23_1^0 46_1^2 48_1^0$ |
| 1338 | $25_1^0 46_1^2 47_1^0$ |
| 1351 | $19_1^0 46_0^2 47_1^0 48_1^0$ |
| 1491 | ? |
| 1499 | $19_1^0 46_1^2 48_1^0$ |
| 1546 | $19_1^0 46_1^2 47_1^0$ |
| 1564 | $18_1^0 46_1^2 48_1^0$ |

**Table III.** Full assignments of the SVLF spectra for excitation of the $45_0^1 47_0^1$, $45_0^1 46_1^0$, $31_0^1$, $45_0^2$, and $44_0^1 45_0^1$ bands.

| $45_0^1 47_0^1$ (+266 cm$^{-1}$) | | $45_0^1 46_0^1$ (+326 cm$^{-1}$) | | $31_0^1$ (+334 cm$^{-1}$) | | $45_0^2$ (+400 cm$^{-1}$) | | $44_0^1 45_0^1$ (+472 cm$^{-1}$) | |
|---|---|---|---|---|---|---|---|---|---|
| Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment | Δν / cm$^{-1}$ | Assignment |
| 0 | $45_0^1 47_0^1$ | 0 | $45_0^1 46_0^1$ | 0 | $31_0^1$ | 0 | $45_0^2$ | 0 | $44_0^1 45_0^1$ |
| 89 | $45_0^1 47_0^1 48_2^0$ | 89 | $45_0^1 46_0^1 48_2^0$ | 89 | $31_0^1 48_2^0$ | 89 | $45_0^2 48_2^0$ | 202 | $33_1^0 44_0^1 45_0^1 48_2^0$ |
| 105 | $33_0^1 45_0^1 47_0^1$ | 105 | $33_1^0 45_0^1 46_0^1$ | 133 | $31_0^1 47_1^0 48_1^0$ | 133 | $45_0^2 47_1^0 48_1^0$ | 231 | $32_1^0 44_0^1 45_0^1$ |
| 132 | $45_0^1 47_1^1 48_1^0$ | 133 | $45_0^1 46_0^1 47_1^0 48_1^0$ | 231 | $31_0^1 32_1^0$ | 201 | $45_0^2 48_4^0$ | 280 | $44_0^1 45_0^1 46_1^0 48_1^0$ |
| 175 | $45_0^1 47_2^1$ | 175 | $45_0^1 46_0^1 47_2^0$ | 279 | $31_0^1 46_1^0 48_1^0$ | 231 | $45_0^2 47_1^0 48_3^0$, | 320 | $32_1^0 44_0^1 45_0^1 48_2^0$ |
| 202 | $45_0^1 47_0^1 48_4^0$, | 202 | $45_0^1 46_0^1 48_4^0$, | 325 | $31_0^1 46_1^0 47_1^0$ | | $32_1^0 45_0^2$ | 363 | $32_1^0 44_0^1 45_0^1 47_1^0 48_1^0$ |
| | $33_1^0 45_0^1 47_0^1 48_2^0$ | | $33_1^0 45_0^1 46_0^1 48_2^0$ | 373 | $31_1^1$ | 241 | $33_1^0 45_0^2 47_1^0 48_1^0$ | 374 | $31_1^0 44_0^1 45_0^1$ |
| 211 | ? | 231 | $45_0^1 46_0^1 47_1^0 48_3^0$ | 441 | $31_0^1 45_1^0 48_1^0$ | 279 | $45_0^2 46_1^0 48_1^0$ | 418 | $44_0^1 45_0^1 46_1^0 47_1^0 48_2^0$ |
| 231 | $45_0^1 47_1^1 48_3^0$ | 242 | $33_1^0 45_0^1 46_0^1 47_1^0 48_1^0$ | 464 | $31_1^1 48_2^0$ | 319 | $32_1^0 45_0^2 48_2^0$ | 446 | $44_1^1 45_0^1 48_1^0$ |
| 275 | $45_0^1 47_2^1 48_2^0$ | 275 | $45_0^1 46_0^1 47_2^0 48_2^0$ | 478 | $31_1^1 33_1^0, 30_1^0 31_0^1$ | 325 | $45_0^2 46_1^0 47_1^0$ | 462 | $33_1^0 44_0^1 45_0^1 47_4^0$ |
| 279 | $45_0^1 46_1^0 47_0^1 48_1^0$ | 279 | $45_0^1 46_1^1 48_1^0$ | 493 | $31_0^1 44_1^0 47_1^0$ | 375 | $45_0^2 46_1^0 48_3^0$, | 480 | $30_1^0 44_0^1 45_0^1$ |
| 304 | $45_0^1 47_3^1 48_1^0$ | 322 | $45_0^1 46_1^1 47_1^0$ | 507 | $31_1^1 47_1^0 48_1^0$ | | $31_1^0 45_0^2$ | 509 | $32_1^0 44_0^1 45_0^1 46_1^0 48_1^0$ |
| 325 | $45_0^1 46_1^0 47_1^1$ | 337 | $32_1^0 33_1^0 45_0^1 46_0^1$ | 603 | $31_1^1 32_1^0$ | 389 | $33_1^0 45_0^2 46_1^0 48_1^0$ | 553 | $32_2^0 44_0^1 45_0^1 48_2^0$ |
| 337 | $32_1^0 33_1^0 45_0^1 47_0^1$ | 355 | $45_0^1 46_0^1 47_2^0 48_4^0$ | 615 | $31_1^1 33_1^0 47_1^0 48_1^0$ | 419 | $45_0^2 46_1^0 47_1^0 48_2^0$ | 570 | $30_1^0 44_0^1 45_0^1 48_2^0$ |
| 355 | $45_0^1 47_2^1 48_4^0$ | 365 | $32_1^0 45_0^1 46_0^1 47_1^0 48_1^0$ | 624 | $28_1^0 31_0^1$ | 441 | $45_1^2 48_1^0$ | 643 | $44_1^1 45_0^1 46_1^0$ |
| 363 | $32_1^0 45_0^1 47_1^1 48_1^0$ | 373 | $45_0^1 46_1^1 48_3^0$, | 695 | $31_1^1 32_1^0 48_2^0$ | 446 | $44_1^0 45_0^2 48_1^0$ | 678 | $32_1^0 44_1^1 45_0^1 48_1^0$ |
| 374 | $45_0^1 46_1^0 47_0^1 48_3^0$, | | $31_1^0 45_0^1 46_0^1$ | 713 | $28_1^0 31_0^1 48_2^0$ | 461 | $45_0^2 46_1^0 47_2^0 48_1^0$, | 711 | $28_1^0 44_0^1 45_0^1 48_2^0$ |
| | $31_1^0 45_0^1 47_0^1$ | 389 | $33_1^0 45_0^1 46_1^1 48_1^0$ | 746 | $31_2^1$ | | $32_2^0 45_0^2$ | 732 | $44_1^1 45_0^1 46_1^0 48_2^0$ |
| 388 | $33_1^0 45_0^1 46_1^0 47_0^1 48_1^0$ | 417 | $45_0^1 46_1^1 47_1^0 48_2^0$, | 838 | $31_2^1 48_2^0$ | 476 | $45_0^2 46_2^0$ | 795 | $44_0^1 45_2^1$ |
| 407 | $33_1^0 45_0^1 47_3^1 48_1^0$ | | $33_1^0 45_0^1 46_0^1 47_3^0 48_1^0$ | 854 | $31_2^1 33_1^0$ | 485 | $45_1^2 47_1^0$ | 803 | $44_1^1 45_1^1$ |
| 419 | $45_0^1 46_1^0 47_1^1 48_2^0$ | 441 | $45_1^1 46_0^1 48_1^0$ | 866 | $28_1^0 31_0^1 33_1^0 47_1^0 48_1^0$ | 493 | $44_1^0 45_0^2 47_1^0$ | 809 | $44_2^1 45_0^1$ |
| 431 | $33_1^0 45_0^1 46_1^0 47_1^1$ | 462 | $45_0^1 46_1^1 47_2^0 48_1^0$, | 978 | $31_2^1 32_1^0$ | 510 | $32_1^0 45_0^2 46_1^0 48_1^0$ | 872 | $32_1^0 44_1^1 45_0^1 46_1^0$ |
| 441 | $45_1^1 47_0^1 48_1^0$ | | $33_1^0 45_0^1 46_0^1 47_4^0$ | 998 | $28_1^0 31_1^1$ | 538 | $45_1^2 48_3^0$ | 894 | $44_1^1 45_1^1 48_2^0$ |
| 461 | $45_0^1 46_1^0 47_2^1 48_1^0$, | 476 | $45_0^1 46_2^1$ | 1002 | ? | 540 | $44_1^0 45_0^2 48_3^0$ | 961 | $30_2^0 44_0^1 45_0^1$ |
| | $33_1^0 45_0^1 47_4^1$ | 485 | $45_1^1 46_0^1 47_1^0$ | 1069 | $28_1^0 31_0^1 45_1^0 48_1^0$ | 554 | $33_1^0 45_1^2 48_1^0$ | 1027 | $32_1^0 44_0^1 45_2^1$ |
| 476 | $45_0^1 46_2^0 47_0^1$ | 493 | $44_1^0 45_0^1 46_0^1 47_1^0$ | 1089 | $28_1^0 31_1^1 48_2^0$ | 564 | $45_0^2 46_2^0 48_2^0$ | 1035 | $32_1^0 44_1^1 45_1^1$ |
| 485 | $45_1^1 47_1^1$ | 510 | $32_1^0 45_0^1 46_1^1 48_1^0$ | 1119 | $31_3^1$ | 569 | $45_1^2 47_1^0 48_2^0$ | 1076 | ? |

| | |
|---|---|
| 493 | $44_1^0 45_0^1 47_1^1$ |
| 506 | $31_1^0 45_0^1 47_1^1 48_1^0$ |
| 538 | $45_1^1 47_0^1 48_3^0$ |
| 553 | $33_1^0 45_1^1 47_0^1 48_1^0$ |
| 569 | $45_1^1 47_1^1 48_2^0$ |
| 623 | $28_1^0 45_0^1 47_0^1$ |
| 636 | $45_1^1 46_1^0 47_0^1$ |
| 698 | ? |
| 717 | ? |
| 758 | $45_0^1 46_3^0 47_0^1 48_1^0$, |
| | $28_1^0 45_0^1 47_1^1 48_1^0$ |
| 796 | $45_2^1 47_0^1$ |
| 859 | $45_1^1 46_1^0 47_1^1 48_3^0$, |
| | $31_1^0 45_1^1 47_1^1$ |
| 904 | $28_1^0 45_0^1 46_1^0 47_0^1 48_1^0$ |
| 927 | $28_1^0 45_0^1 47_3^1 48_1^0$ |
| 950 | $28_1^0 45_0^1 46_1^0 47_1^1$ |
| 985 | $28_1^0 45_0^1 47_2^1 48_4^0$ |
| 1068 | $28_1^0 45_1^1 47_0^1 48_1^0$ |
| 1111 | $28_1^0 45_1^1 47_1^1$ |
| 1145 | $25_1^0 45_0^1 47_1^1 48_1^0$ |
| 1179 | $28_1^0 33_1^0 45_1^1 47_0^1 48_1^0$ |
| 1292 | $28_1^0 45_0^1 46_1^0 47_0^1 48_1^0$ |
| 1339 | $25_1^0 45_0^1 46_1^0 47_1^1$ |
| 1350 | $25_1^0 32_1^0 33_1^0 45_0^1 47_0^1$ |
| 1375 | $25_1^0 45_0^1 47_2^1 48_4^0$ |
| 1456 | $25_1^0 45_1^1 47_0^1 48_1^0$ |
| 1500 | $25_1^0 45_1^1 47_1^1$ |

| | |
|---|---|
| 539 | $45_1^1 46_0^1 48_3^0$, |
| | $44_1^0 45_0^1 46_0^1 48_3^0$ |
| 565 | $45_0^1 46_2^1 48_2^0$ |
| 569 | $45_1^1 46_0^1 47_1^0 48_2^0$ |
| 583 | $44_1^0 45_0^1 46_0^1 47_1^0 48_2^0$ |
| 606 | $31_1^0 32_1^0 45_0^1 46_0^1$ |
| 636 | $45_1^1 46_1^1$ |
| 643 | $44_1^0 45_0^1 46_1^1$ |
| 650 | $45_0^1 46_2^1 48_4^0$ |
| 704 | ? |
| 727 | $45_1^1 46_1^1 48_2^0$ |
| 758 | $45_0^1 46_3^1 48_1^0$, |
| | $28_1^0 45_0^1 46_0^1 47_1^0 48_1^0$ |
| 795 | $45_2^1 46_0^1$ |
| 799 | $45_0^1 46_3^1 47_1^0$ |
| 851 | $26_1^0 45_0^1 46_0^1$ |
| 866 | $33_1^0 45_0^1 46_3^1 48_1^0$ |
| 945 | $28_1^0 32_1^0 45_0^1 46_0^1 48_2^0$ |
| 962 | $28_1^0 32_1^0 33_1^0 45_0^1 46_0^1$ |
| 1011 | $25_1^0 45_0^1 46_0^1$ |
| 1043 | $33_1^0 45_0^1 46_0^1 47_3^0 48_1^0$ |
| 1067 | $28_1^0 45_1^1 46_0^1 48_1^0$ |
| 1101 | $28_1^0 45_0^1 46_2^1$ |
| 1189 | $26_1^0 32_1^0 33_1^0 45_0^1 46_0^1$ |
| 1332 | $26_1^0 45_0^1 46_2^1$ |
| 1350 | $25_1^0 32_1^0 33_1^0 45_0^1 46_0^1$ |
| 1387 | $23_1^0 32_1^0 33_1^0 45_0^1 46_0^1$ |
| 1456 | $25_1^0 45_1^1 46_0^1 48_1^0$ |
| 1491 | $25_1^0 45_0^1 46_2^1$ |
| 1499 | $25_1^0 45_1^1 46_0^1 47_1^0$ |
| 1525 | $23_1^0 45_0^1 46_2^1$ |

| | |
|---|---|
| 1220 | ? |
| 1228 | $26_1^0 31_1^1$ |
| 1373 | $28_1^0 31_2^1$ |
| 1386 | $25_1^0 31_1^1$ |
| 1423 | $23_1^0 31_1^1$ |
| 1457 | $26_1^0 31_1^1 32_1^0$ |
| 1478 | $25_1^0 31_1^1 48_2^0$ |

| | |
|---|---|
| 585 | $44_1^0 45_0^2 47_1^0 48_2^0$ |
| 605 | $31_1^0 32_1^0 45_0^2$ |
| 623 | $28_1^0 45_0^2$ |
| 636 | $45_1^2 46_1^0$ |
| 643 | $44_1^0 45_0^2 46_1^0$ |
| 650 | $45_0^2 46_2^0 48_4^0$ |
| 673 | $32_1^0 45_1^2 48_1^0$ |
| 703 | ? |
| 728 | $45_1^2 46_1^0 48_2^0$ |
| 770 | ? |
| 795 | $45_2^2$ |
| 803 | $44_1^0 45_1^2$ |
| 865 | $33_1^0 45_0^2 46_3^0 48_1^0$ |
| 904 | $28_1^0 45_0^2 46_1^0 48_1^0$ |
| 1070 | $28_1^0 45_0^2 44_1^0 48_1^0$ |
| 1101 | $28_1^0 45_0^2 46_2^0$ |
| 1132 | $28_1^0 32_1^0 45_0^2 46_1^0 48_1^0$ |
| 1261 | $28_1^0 45_1^2 46_1^0$ |
| 1268 | $28_1^0 44_1^0 45_0^2 46_1^0$ |
| 1293 | $26_1^0 45_1^2 48_1^0$ |
| 1299 | $26_1^0 44_1^0 45_0^2 48_1^0$ |
| 1330 | $26_1^0 45_0^2 46_2^0$ |
| 1457 | $25_1^0 45_0^2 44_1^0 48_1^0$ |
| 1490 | $25_1^0 45_0^2 46_2^0$, |
| | $26_1^0 45_1^2 46_1^0$ |
| 1500 | $25_1^0 45_1^2 47_1^0$ |
| 1524 | $25_1^0 32_1^0 45_0^2 46_1^0 48_1^0$ |

| | |
|---|---|
| 1104 | $28_0^1 30_1^0 44_0^1 45_0^1$ |
| 1133 | $28_1^0 32_1^0 44_0^1 45_0^1 46_1^0 48_1^0$ |
| 1174 | $28_1^0 32_2^0 44_0^1 45_0^1 48_2^0$ |
| 1268 | $28_1^0 44_1^1 45_0^1 46_1^0$ |
| 1293 | ? |
| 1335 | $26_1^0 30_1^0 44_0^1 45_0^1$ |
| 1422 | $28_1^0 44_1^1 45_2^1$ |
| 1428 | $28_1^0 44_1^1 45_1^1$ |
| 1493 | $25_1^0 30_1^0 44_0^1 45_0^1$ |
| 1523 | $25_1^0 32_1^0 44_0^1 45_0^1 46_1^0 48_1^0$ |

**Table IV.** Full assignment of the SVLF spectrum for excitation of the $28^1_0$ band.

| $28^1_0$ (+539 cm$^{-1}$) | |
|---|---|
| Δν / cm$^{-1}$ | Assignment |
| 0 | $28^1_0$ |
| 231 | $28^1_0 32^0_1$ |
| 371 | $28^1_0 31^0_1$ |
| 445 | $28^1_0 44^0_1 48^0_1$ |
| 462 | $28^1_0 32^0_2$ |
| 479 | $28^1_0 30^0_1$ |
| 507 | $28^1_0 31^0_1 47^0_1 48^0_1$ |
| 542 | $28^1_0 44^0_1 48^0_3$ |
| 581 | $28^1_0 44^0_1 47^0_1 48^0_2$ |
| 605 | $28^1_0 31^0_1 32^0_1$ |
| 623 | $28^1_1$ |
| 677 | $28^1_0 32^0_1 44^0_1 48^0_1$ |
| 712 | $28^1_1 48^0_2$ |
| 756 | $28^1_0 47^0_1 48^0_1$ |
| 794 | $28^1_0 45^0_2$ |
| 801 | $28^1_1 47^0_2$ |
| 809 | $28^1_0 44^0_2$ |
| 854 | $28^1_1 32^0_1$ |
| | $26^0_1 28^1_0$ |
| 1229 | $28^1_1 31^0_1 32^0_1$ |
| 1249 | $28^1_2$ |
| 1338 | $28^1_2 48^0_2$ |
| 1384 | $28^1_2 47^0_1 48^0_1$ |
| 1476 | $26^0_1 28^1_1$ |