

Appendix B

The figures given in this section presents spectra of low sample pressure water vapor and water vapor broadened by air. The spectra cover the region from 4400 to 7840 cm^{-1} . The following table lists the experimental conditions of the laboratory runs used to generate the observed spectra. The observed spectra were obtained with the Fourier transform spectrometer located in the McMath solar facility at the Kitt Peak National Observatory. Computed spectra overlay the observed spectra and above each two spectra are residual plots giving percent differences between the observed and fitted spectra. The water vapor computed spectra were derived from the spectral parameters given in the compilation, Sisam.H2O. In some spectral regions, the observed spectra contain CO_2 features and were included in the computed spectra using parameters given in HITRAN2000 and updated parameters obtained by this author. Also observed in the low sample pressure spectra were impurity features due to NH_3 , and CO_2 . The NH_3 spectral parameters used to compute these features in the spectra were obtained from measurements of NH_3 spectra and these spectra are displayed in Appendix F.

Run	spectral resolution (cm^{-1})	H_2O pressure (Torr)	path (m)	air pressure (Torr)	% of total pressure NH_3 CO_2	
J119.6	0.011	5.47	25		7.0×10^{-6}	1.5×10^{-4}
J119.7	0.011	5.47	73		7.0×10^{-6}	1.5×10^{-4}
J119.9	0.011	5.47	433		7.0×10^{-6}	1.5×10^{-4}
J144.6	0.011	9.5	1.5	589		6.3×10^{-4}
J146.10	0.011	9.5	29	590		6.3×10^{-4}
J146.12	0.011	9.0	197	592		6.3×10^{-4}

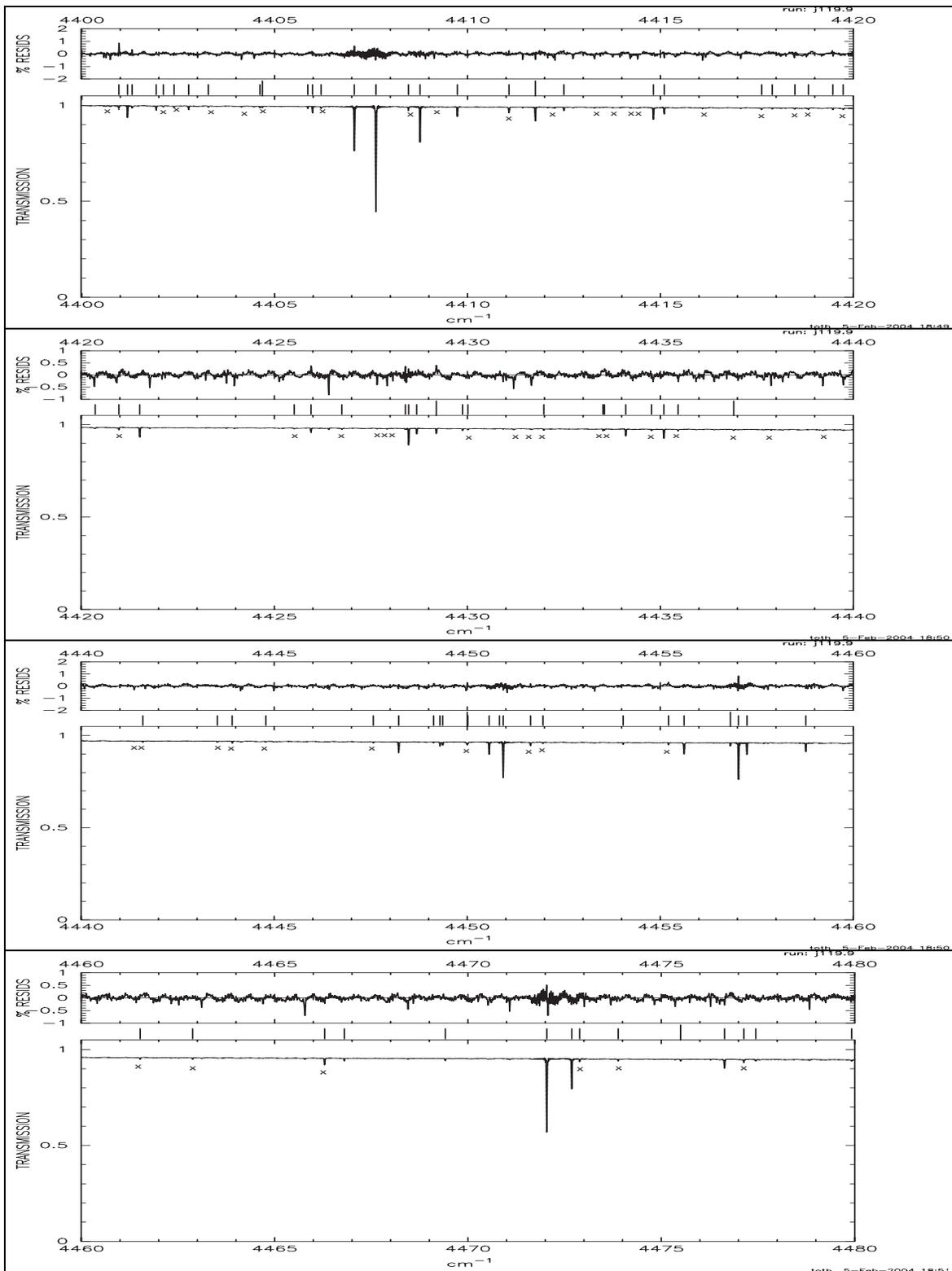


Figure B1. Observed and computed spectra of H_2O . Observed spectra from run J119.9. Absorptions denoted with an x are due to NH_3

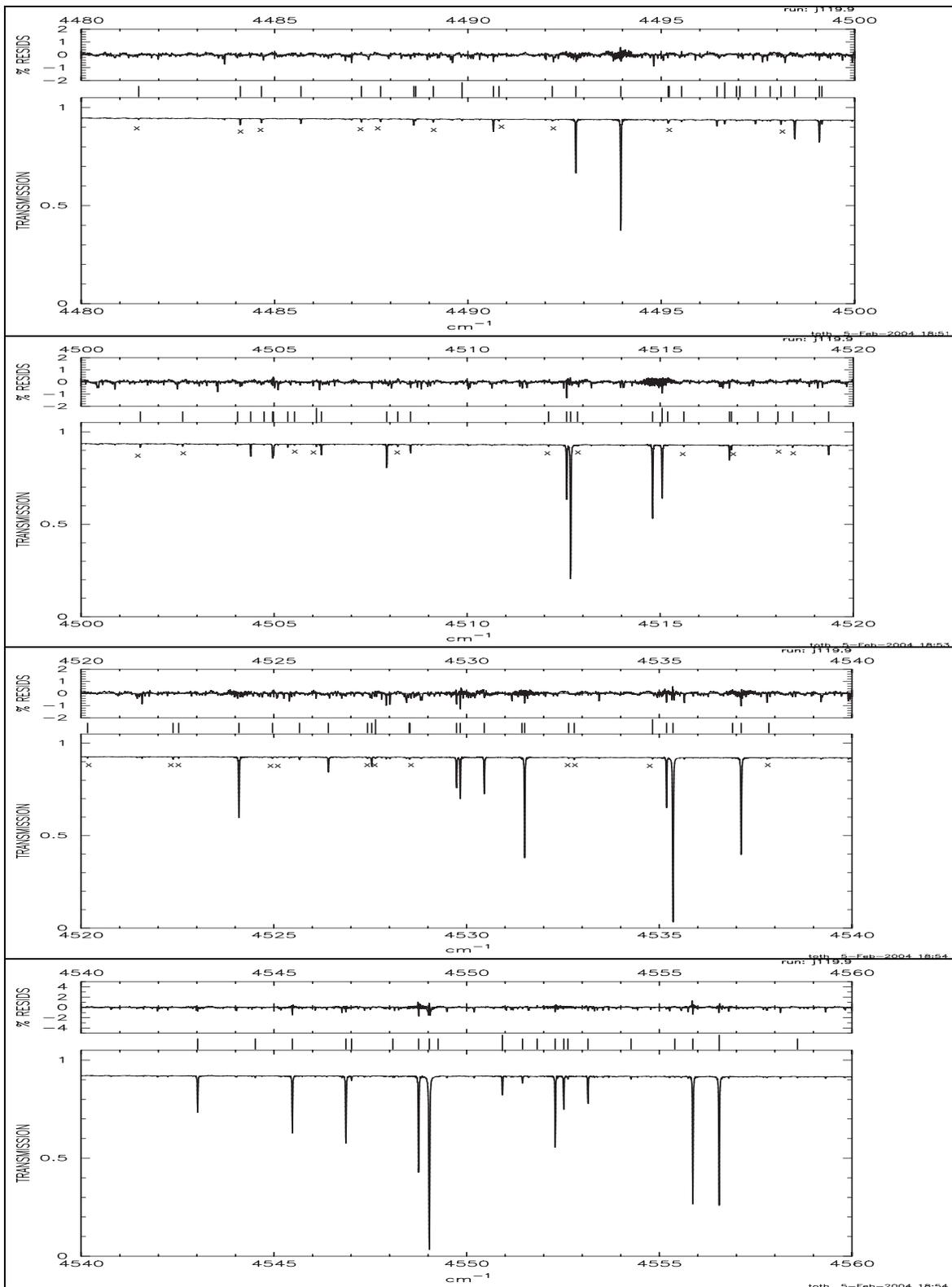


Figure B2. Observed and computed spectra of H₂O. Observed spectra from run J119.9. Absorptions denoted with an x are due to NH₃

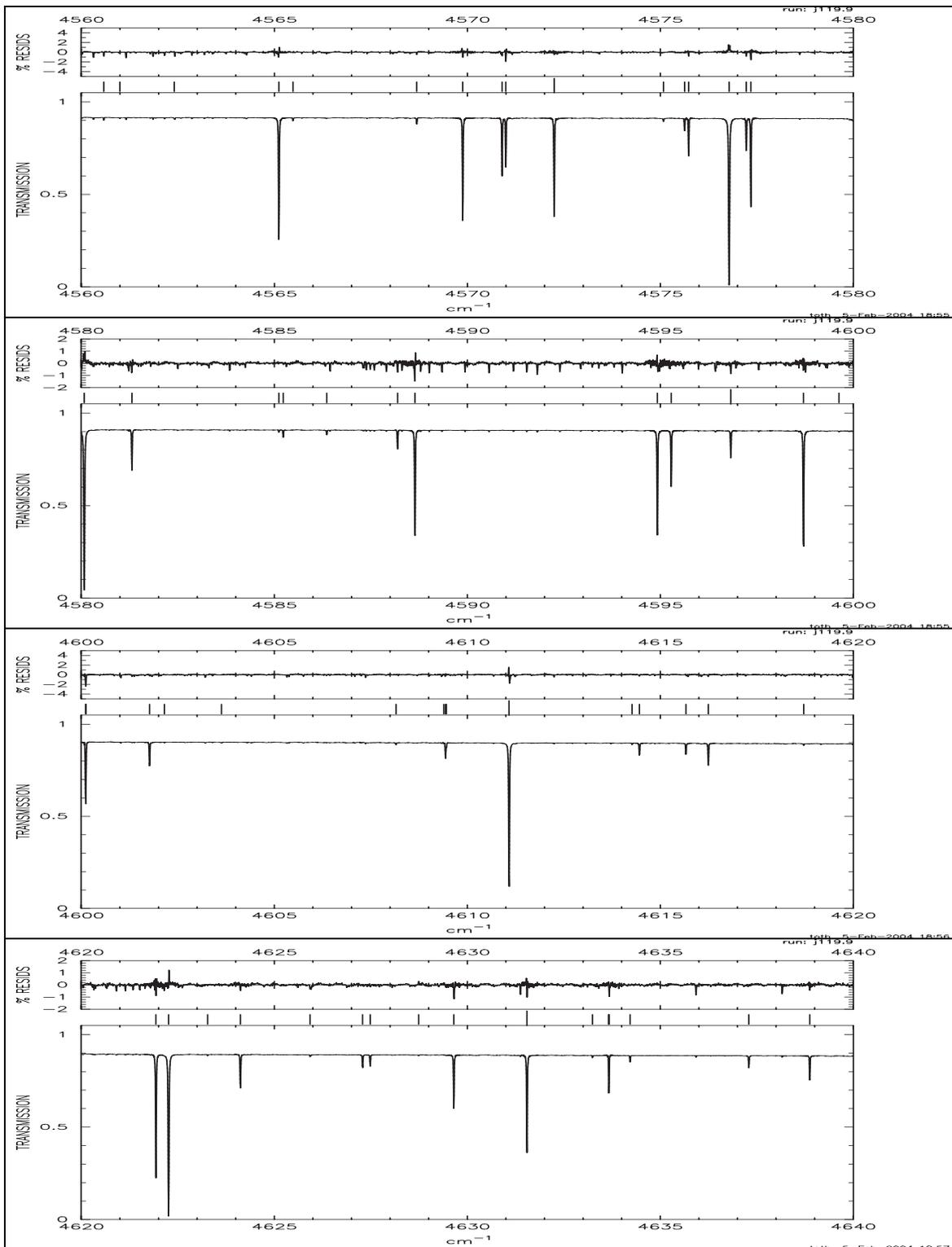


Figure B3. Observed and computed spectra of H₂O. Observed spectra from run J119.9. Weak absorptions due to impurity in the sample (not NH₃) also observed.

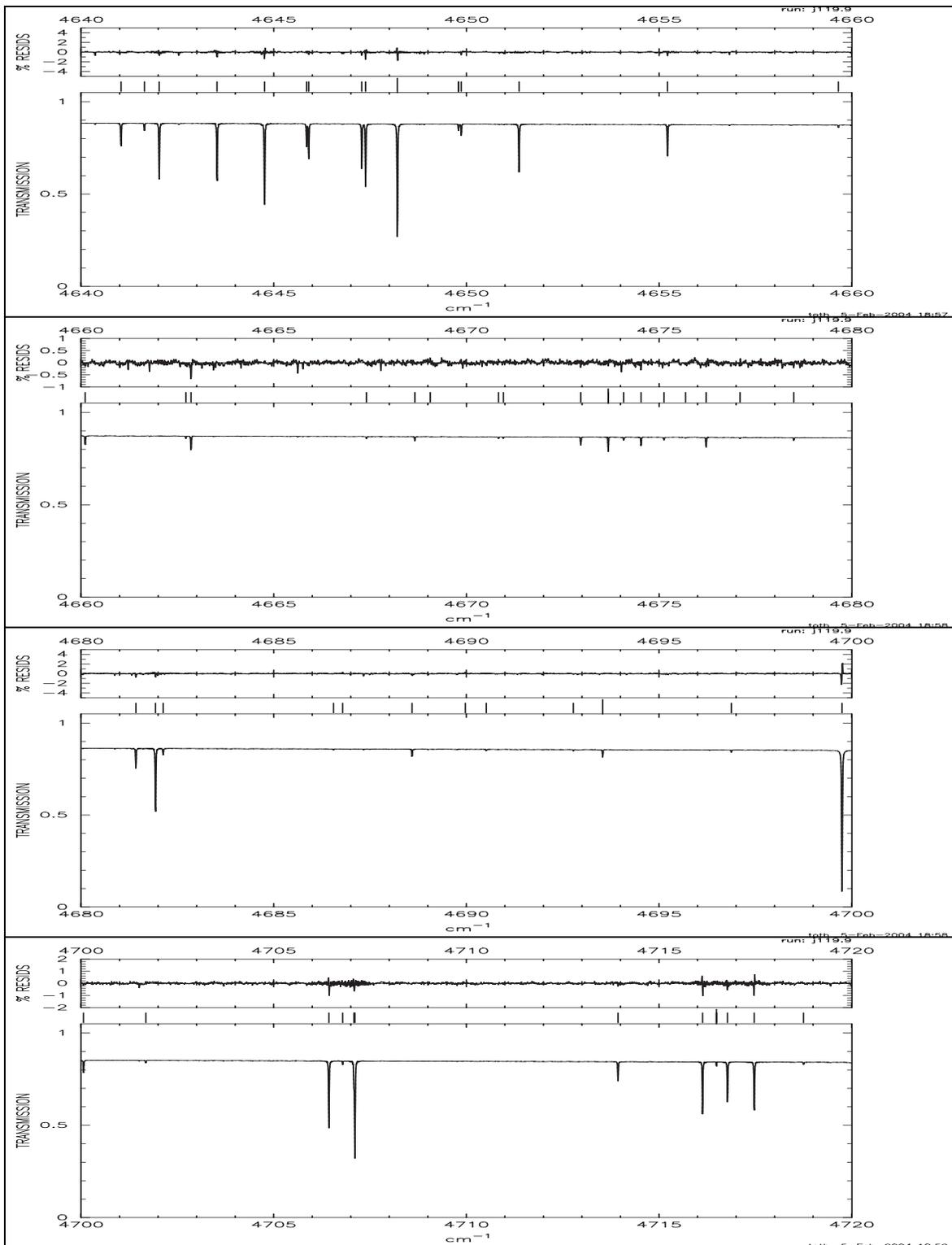


Figure B4. Observed and computed spectra of H₂O. Observed spectra from run J119.9
 Weak absorptions due to impurity in the sample (not NH₃) also observed.

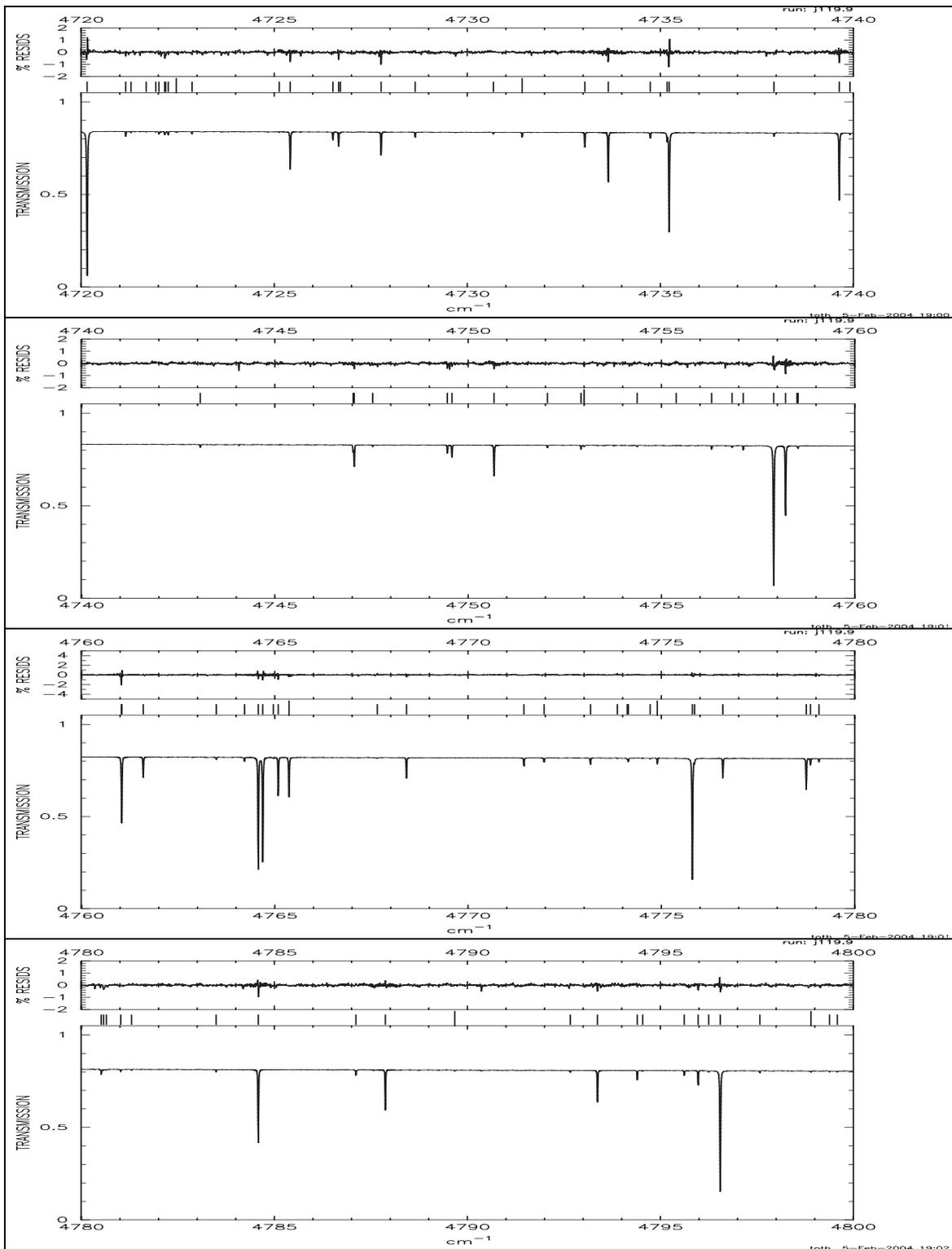


Figure B5. Observed and computed spectra of H₂O. Observed spectra from run J119.9

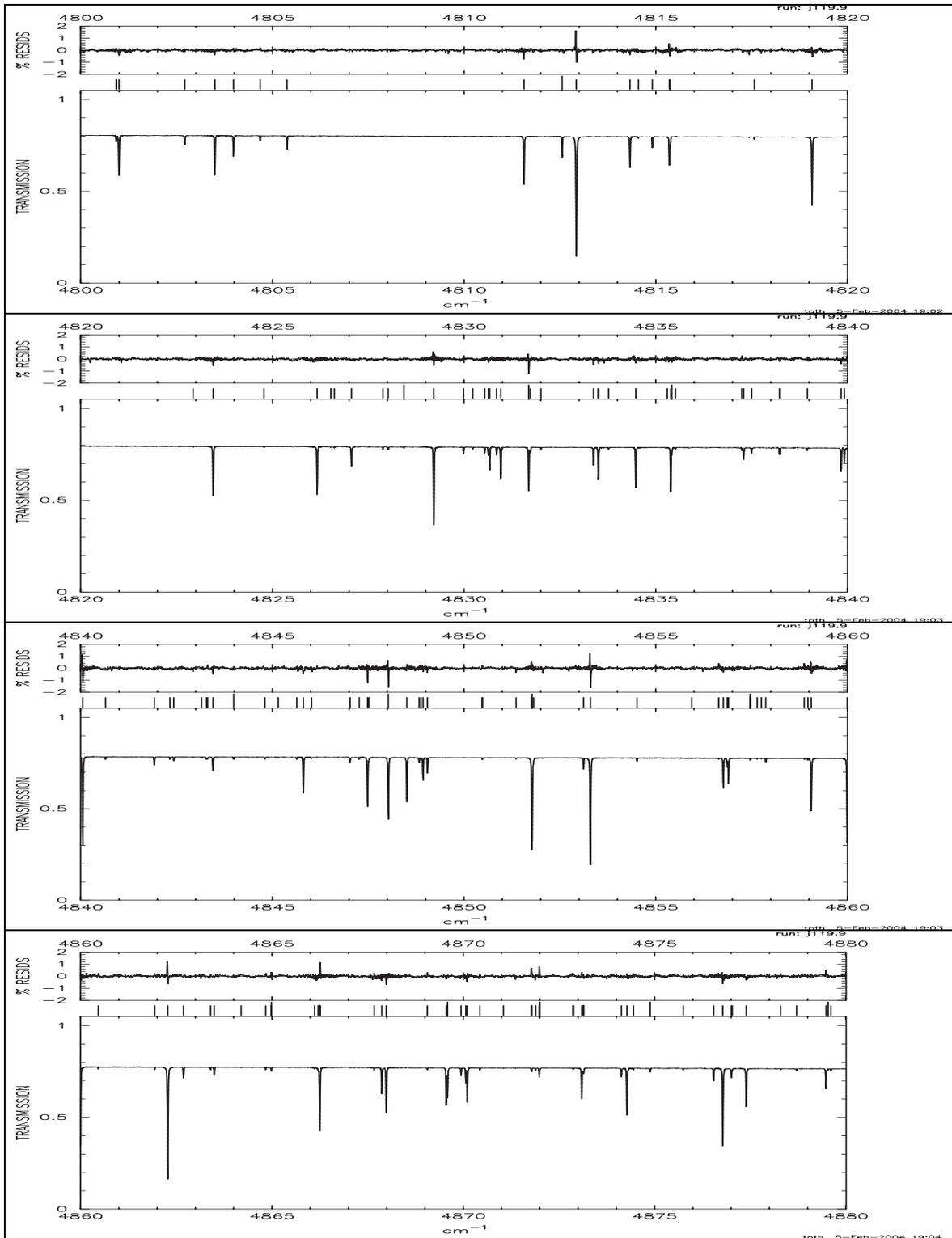


Figure B6. Observed and computed spectra of H₂O. Observed spectra from run J119.9

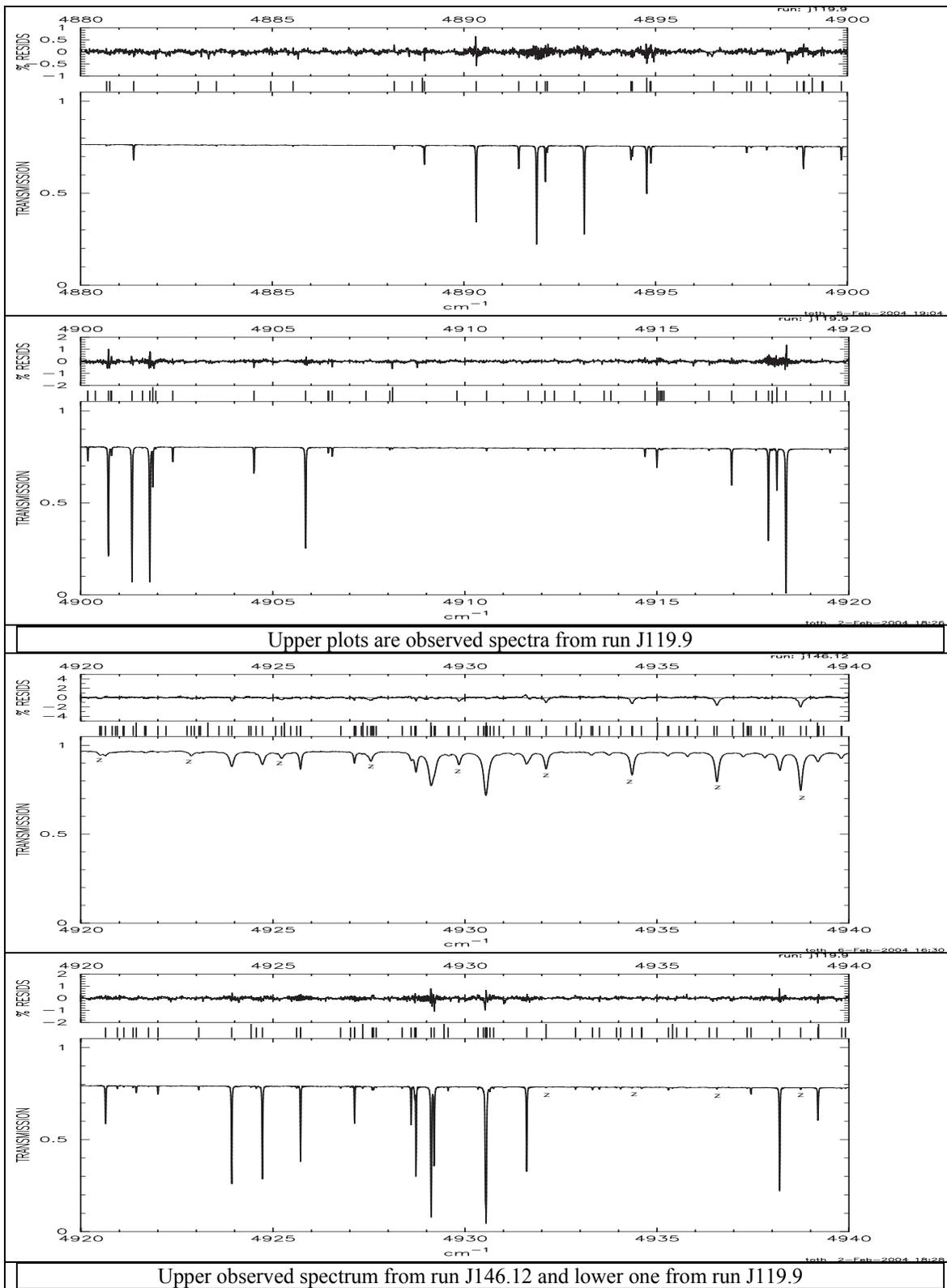
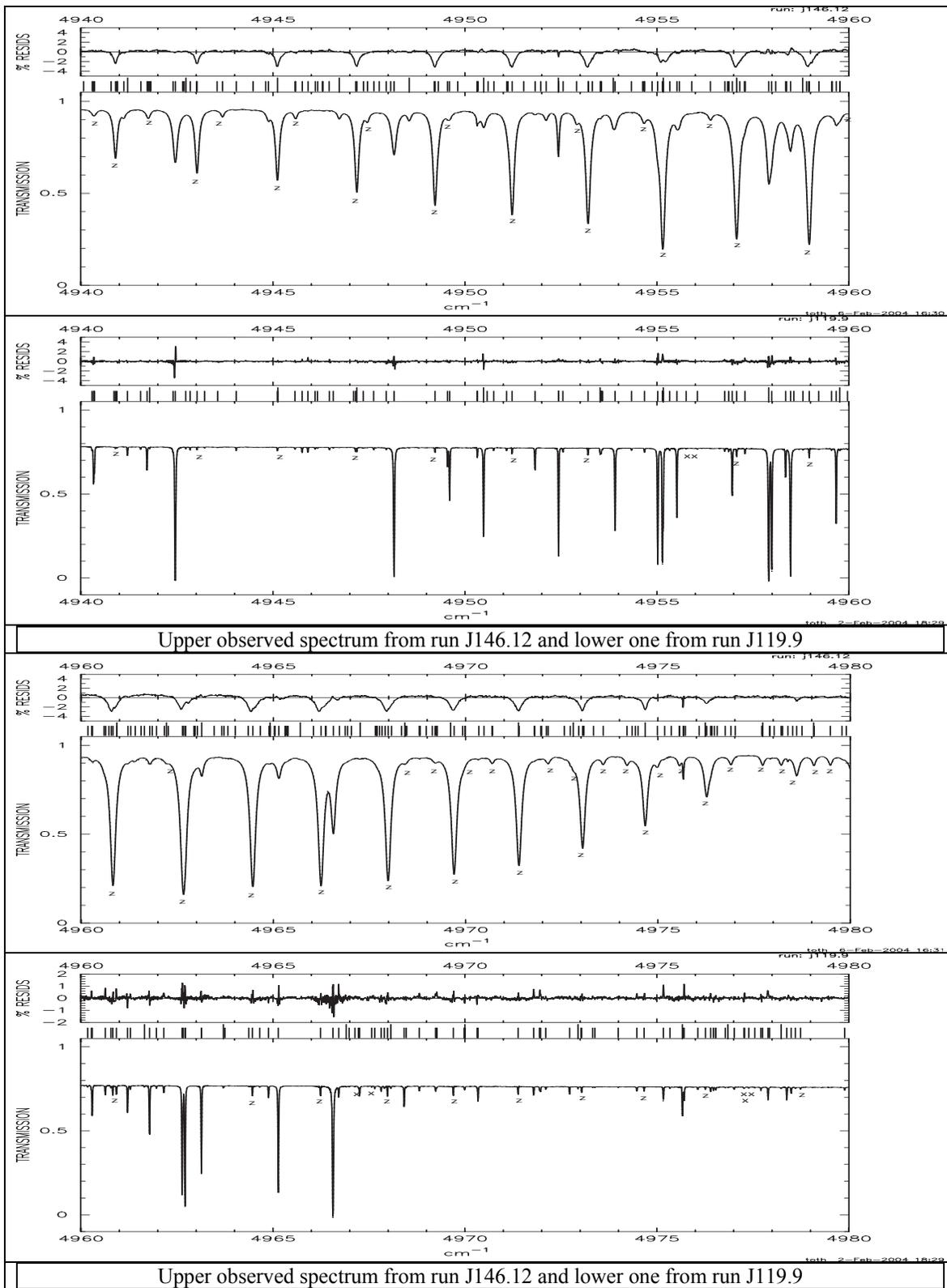


Figure B7. Observed and computed spectra of H₂O. Absorptions denoted with a z are due to CO₂



Upper observed spectrum from run J146.12 and lower one from run J119.9

Upper observed spectrum from run J146.12 and lower one from run J119.9

Figure B8. Observed and computed spectra of H_2O . Absorptions denoted with a z are due to CO_2 and those marked with an x are due to NH_3

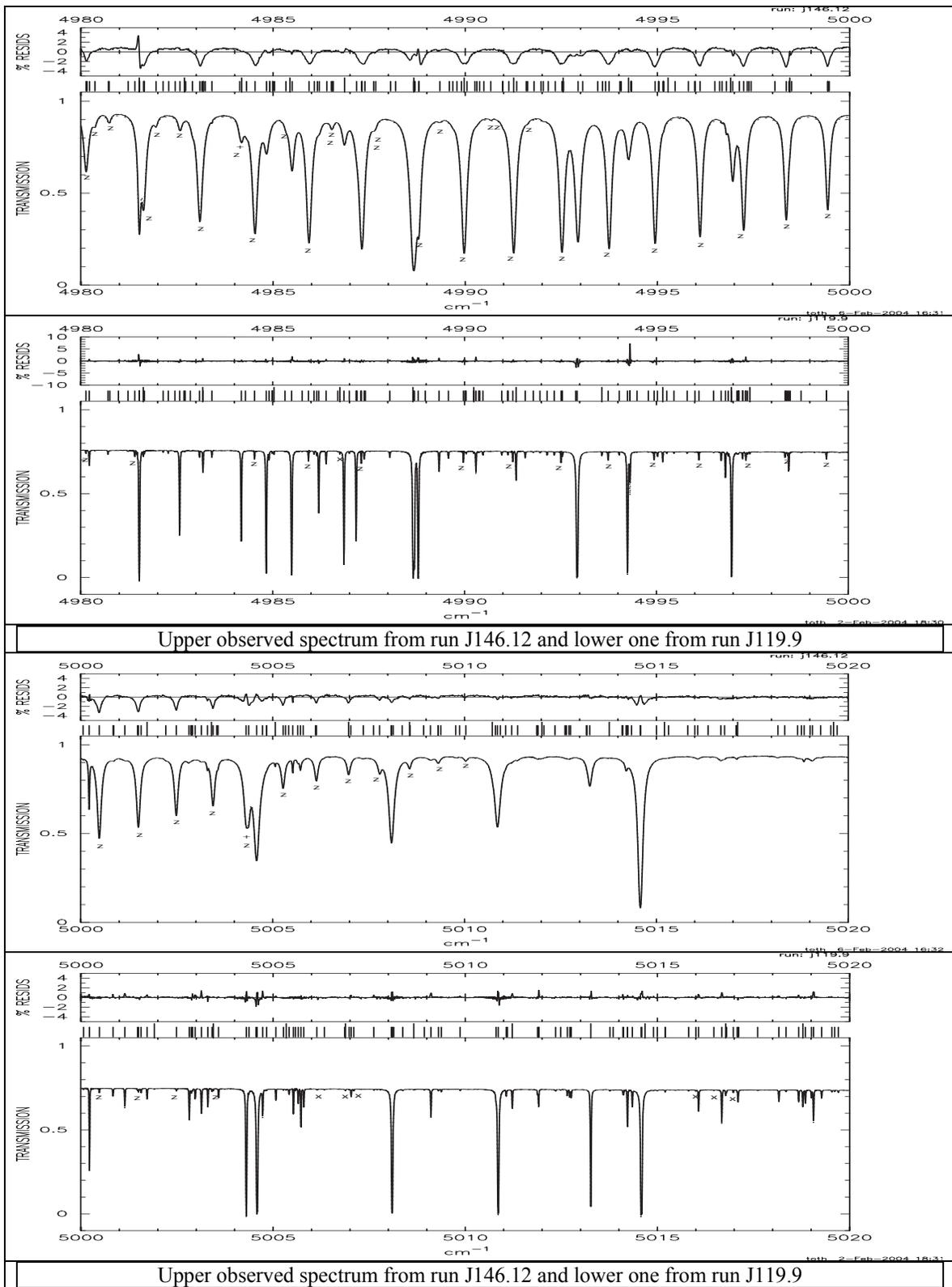


Figure B9. Observed and computed spectra of H₂O. Absorptions denoted with a z are due to CO₂ and those marked with an x are due to NH₃

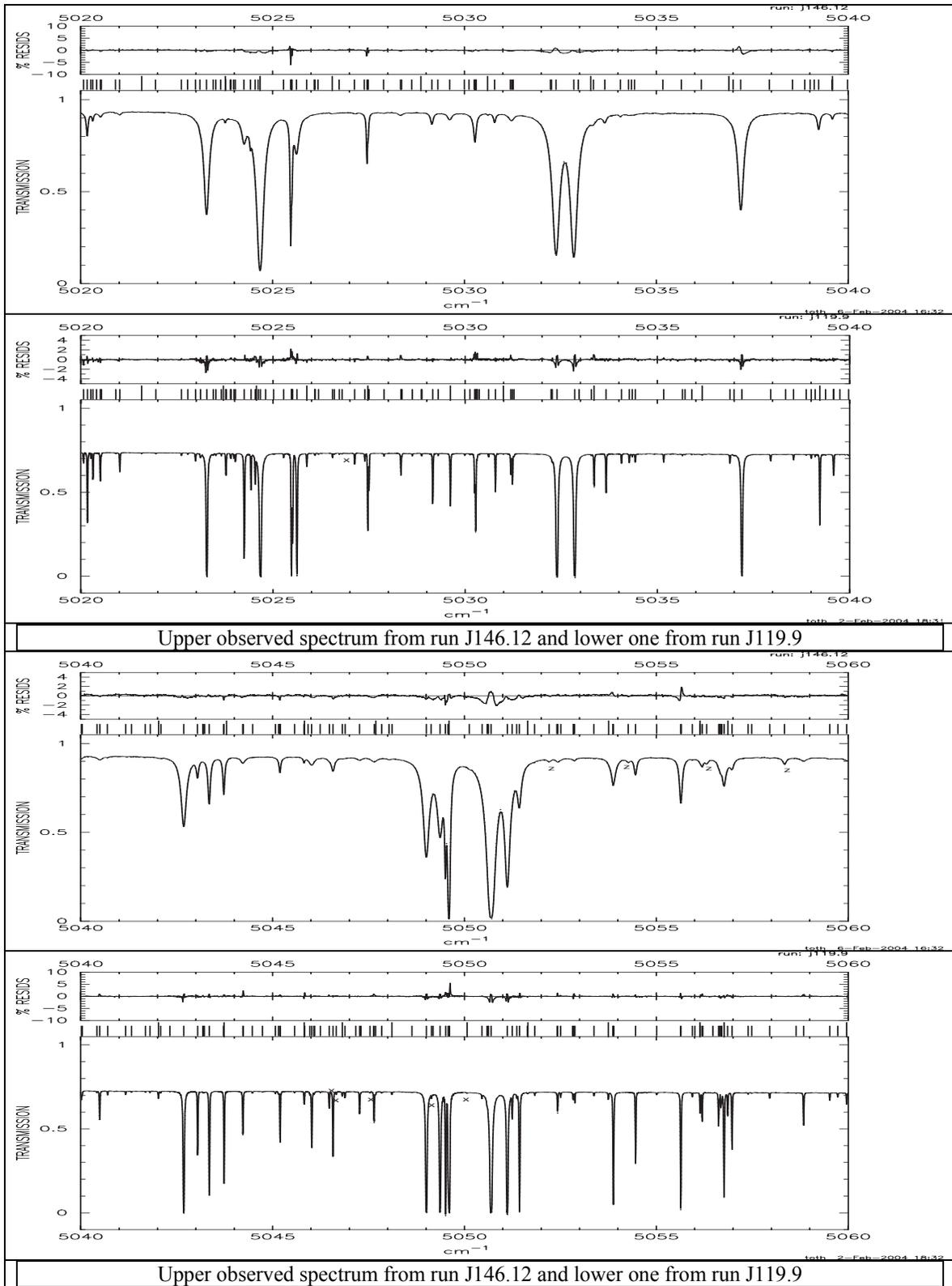


Figure B10. Observed and computed spectra of H₂O. Absorptions denoted with a z are due to CO₂ and those marked with an x are due to NH₃

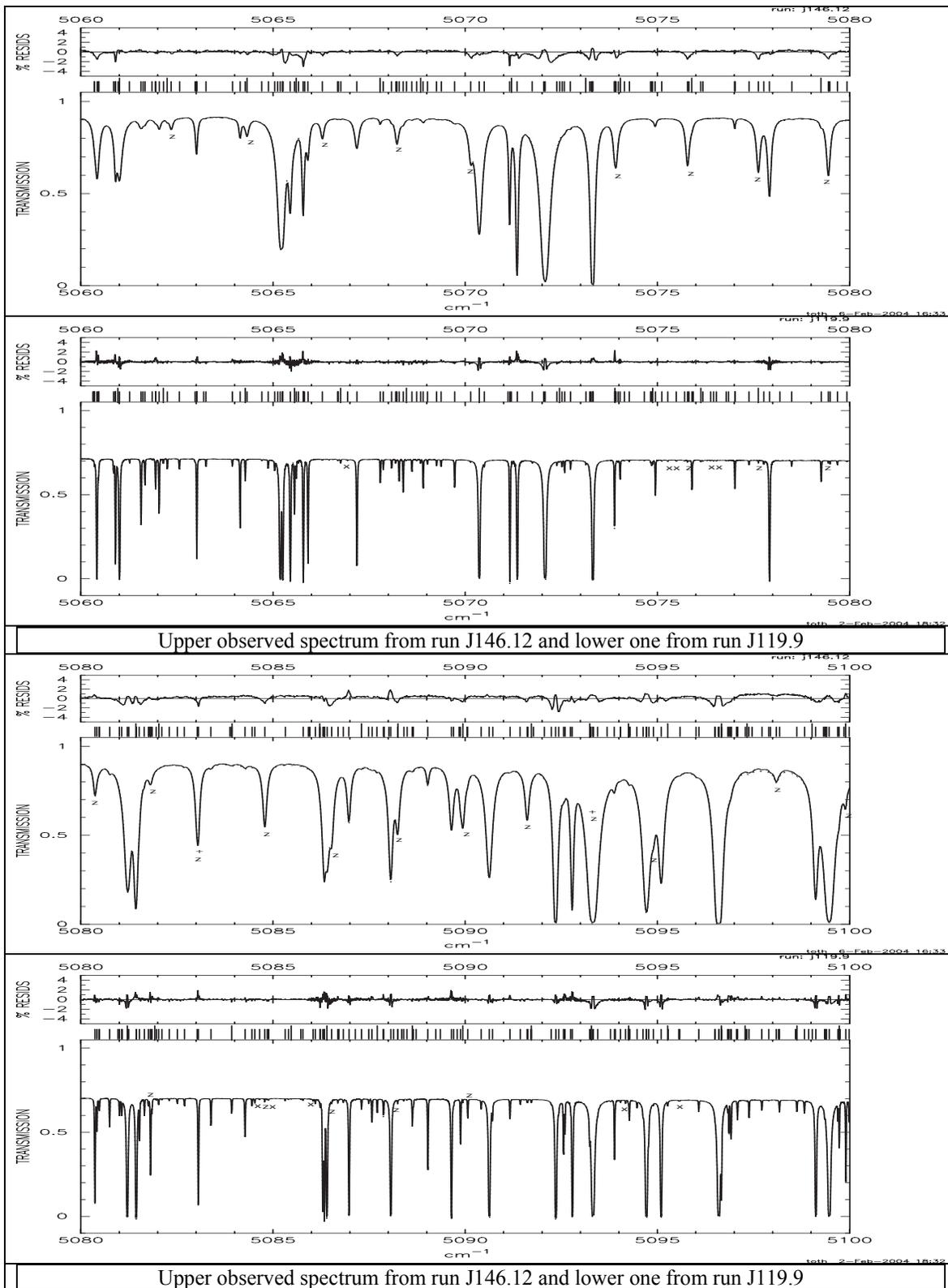


Figure B11. Observed and computed spectra of H₂O. Absorptions denoted with a z are due to CO₂ and those marked with an x are due to NH₃

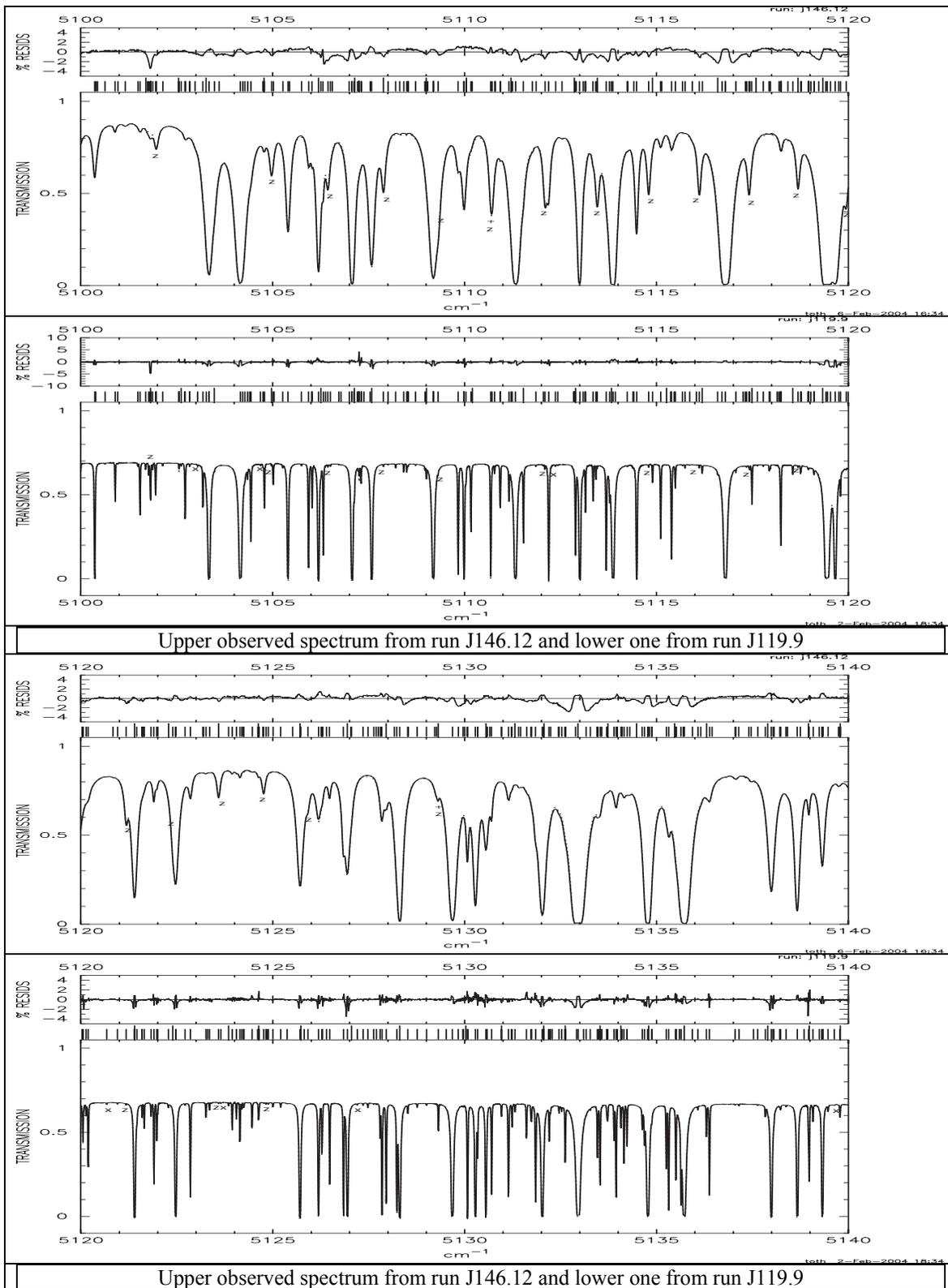


Figure B12. Observed and computed spectra of H_2O . Absorptions denoted with a z are due to CO_2 and those marked with an x are due to NH_3

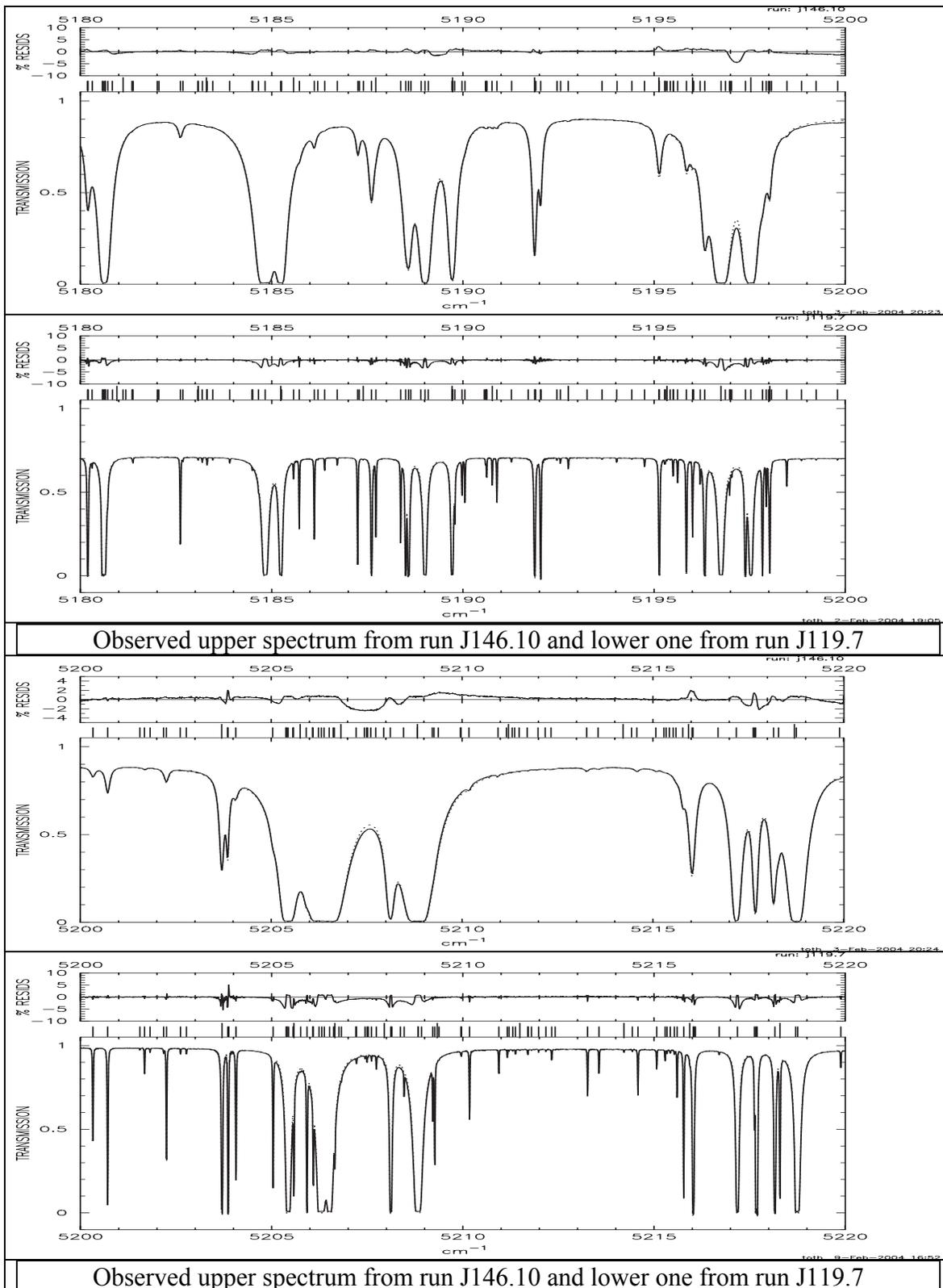


Figure B14. Observed and computed spectra of H₂O

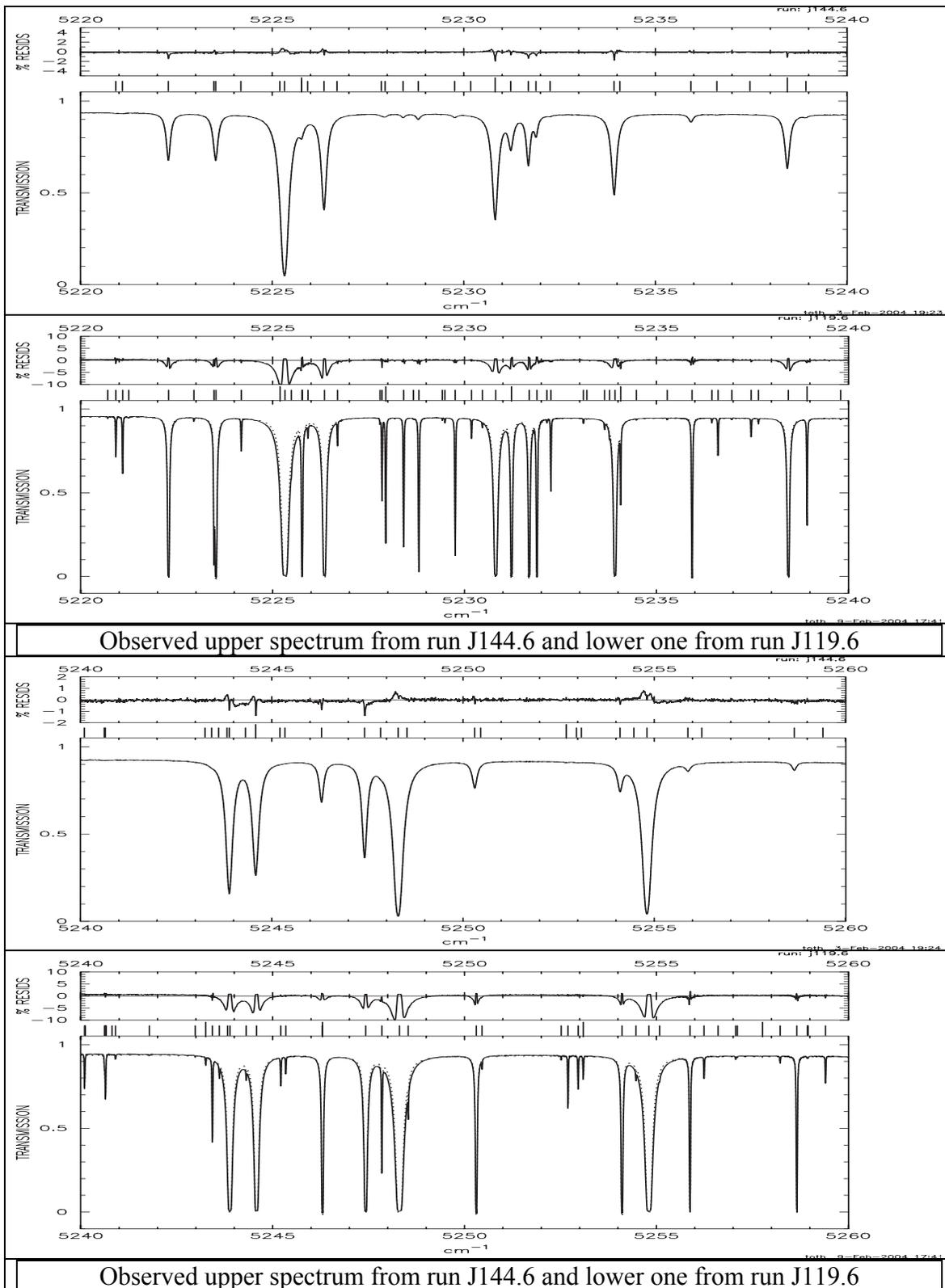


Figure B15. Observed and computed spectra of H₂O

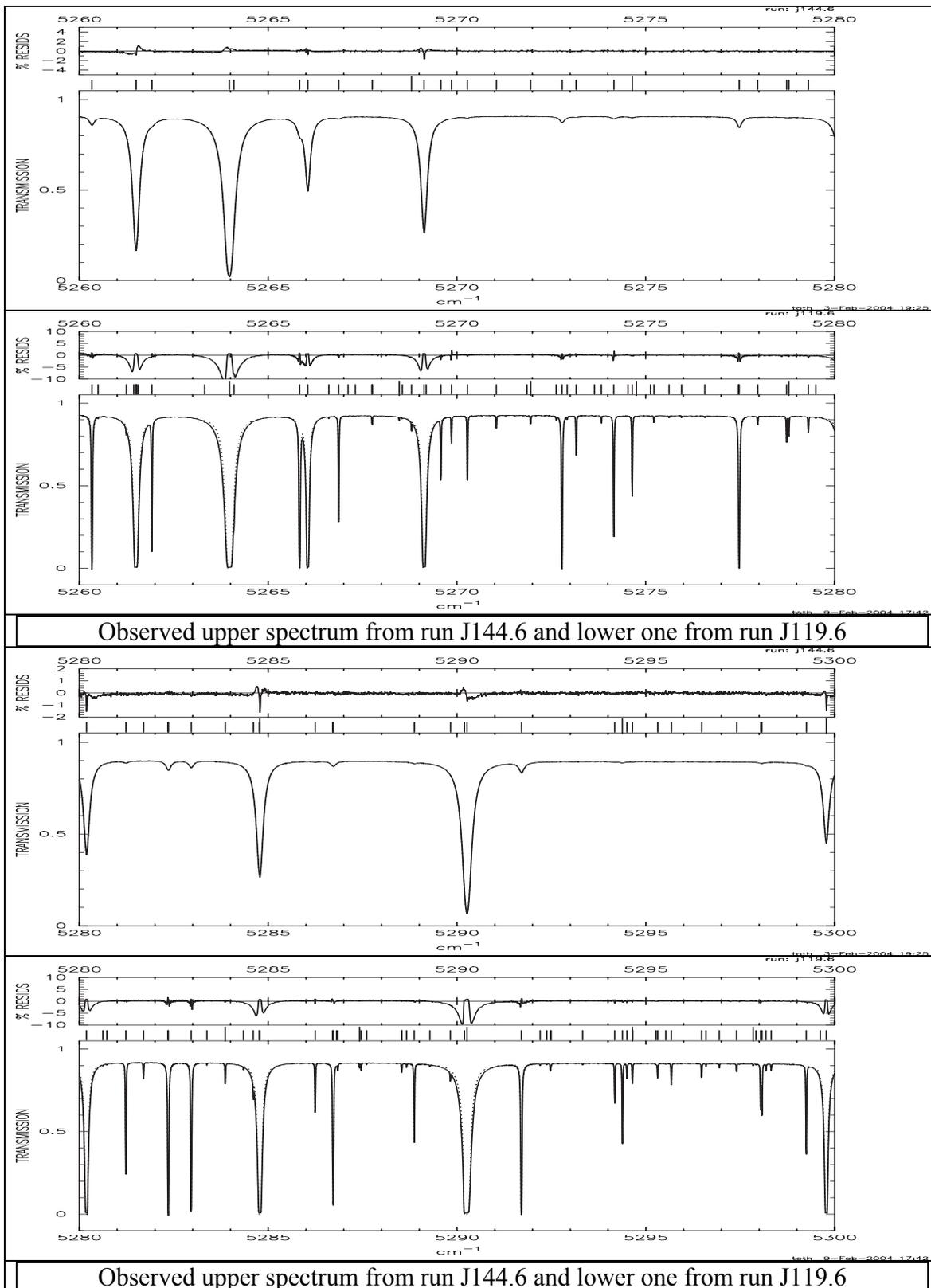
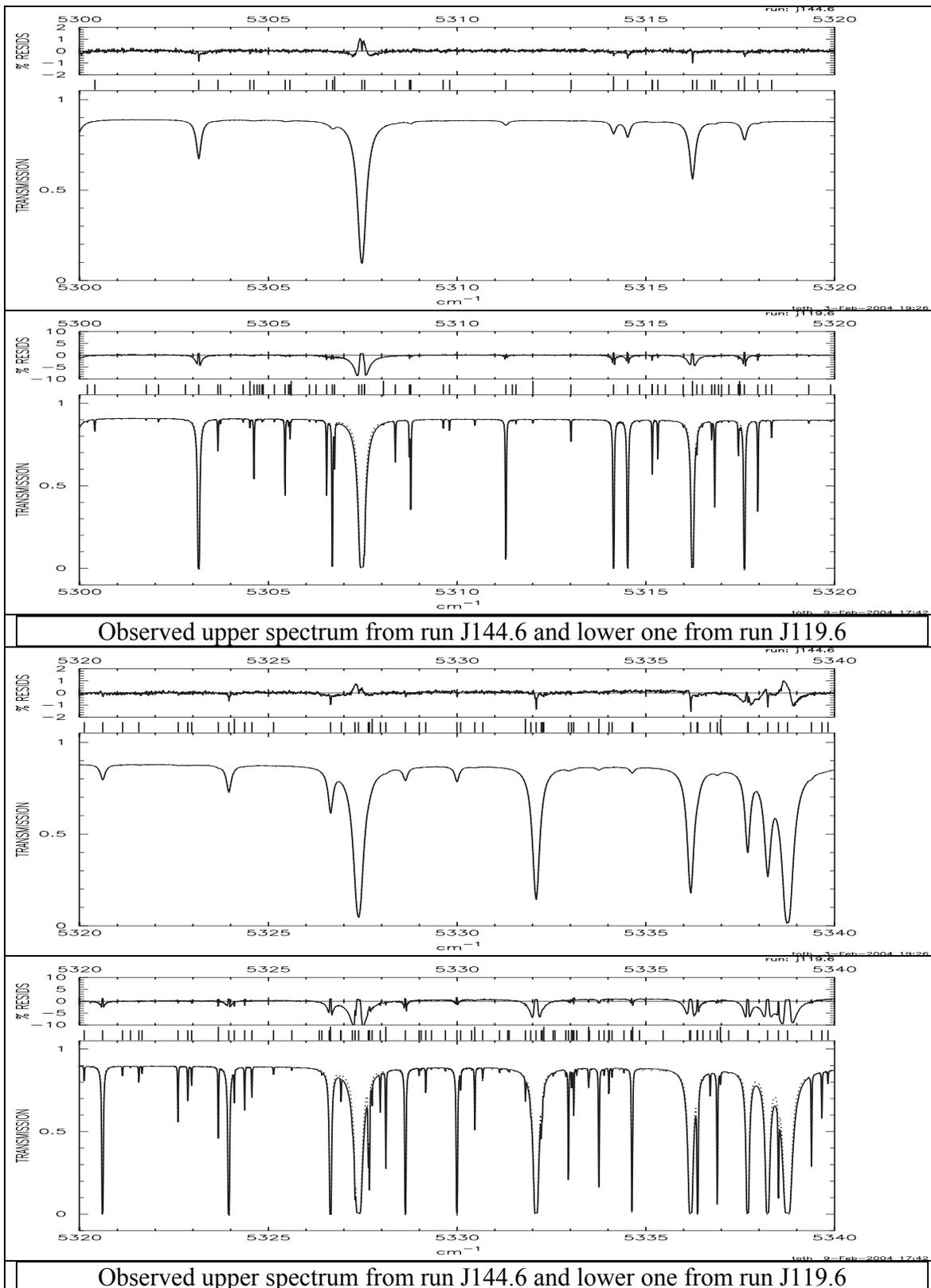


Figure B16. Observed and computed spectra of H₂O



Observed upper spectrum from run J144.6 and lower one from run J119.6

Observed upper spectrum from run J144.6 and lower one from run J119.6

Figure B17. Observed and computed spectra of H₂O

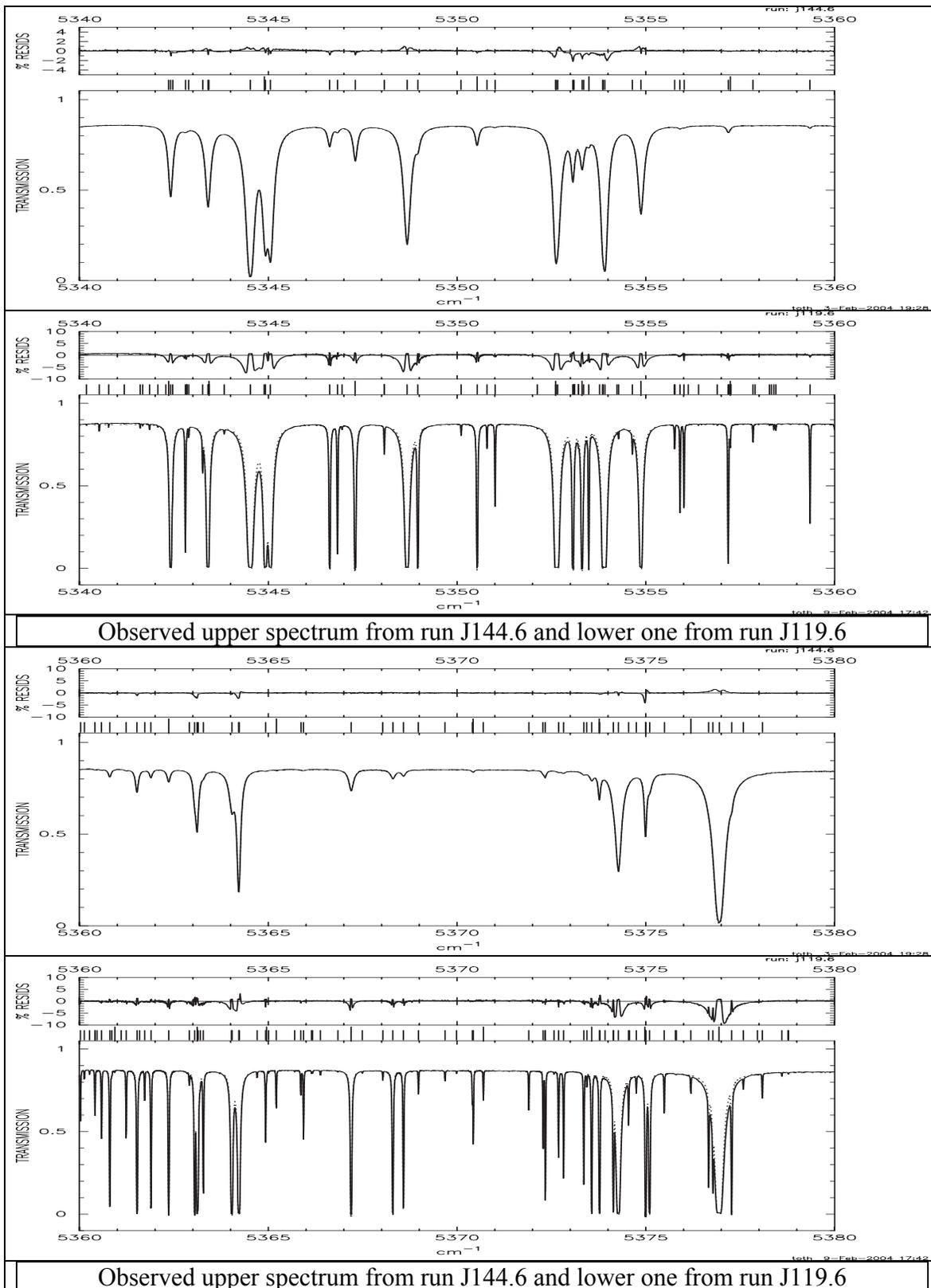


Figure B18. Observed and computed spectra of H₂O

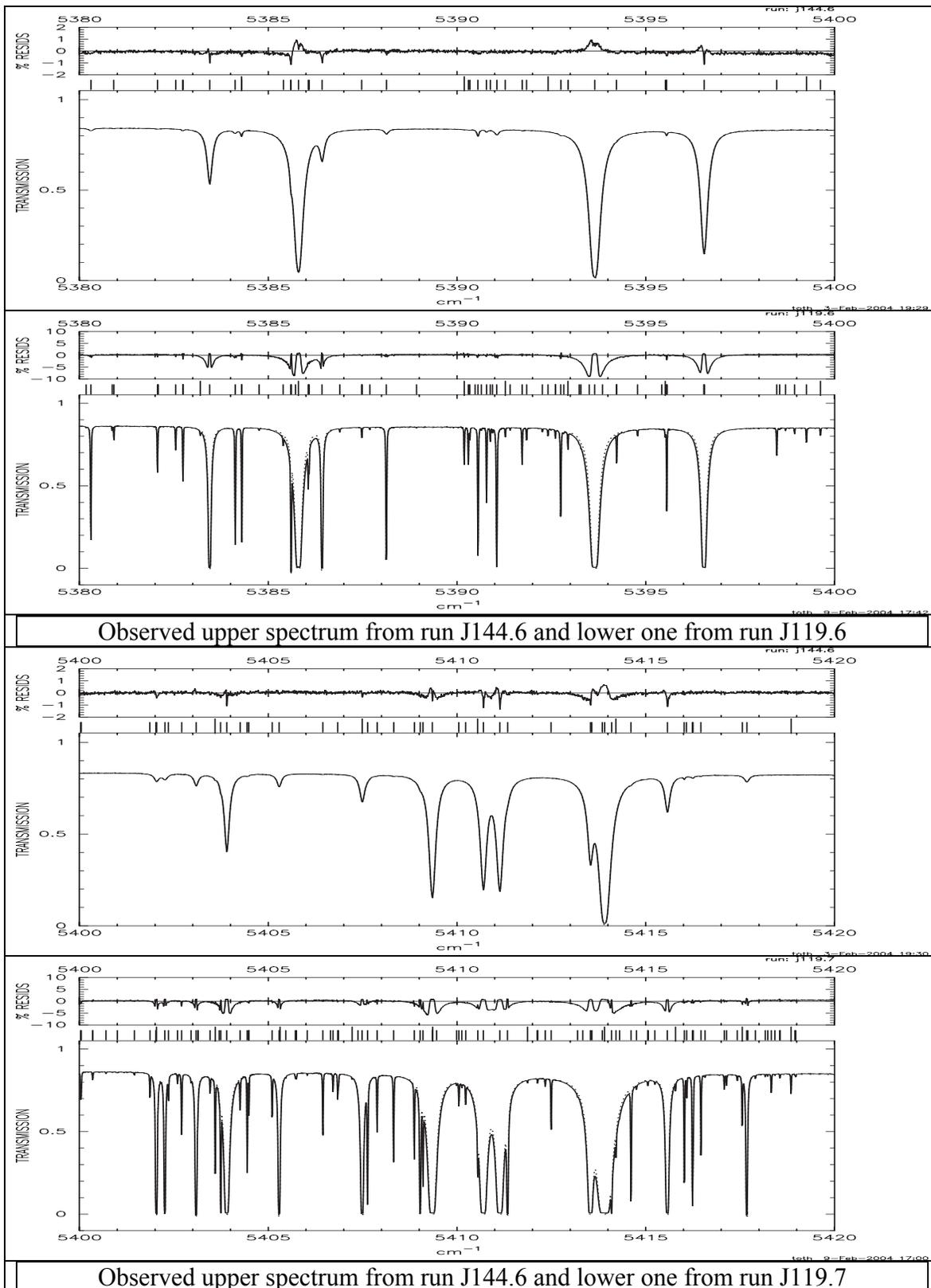


Figure B19. Observed and computed spectra of H₂O

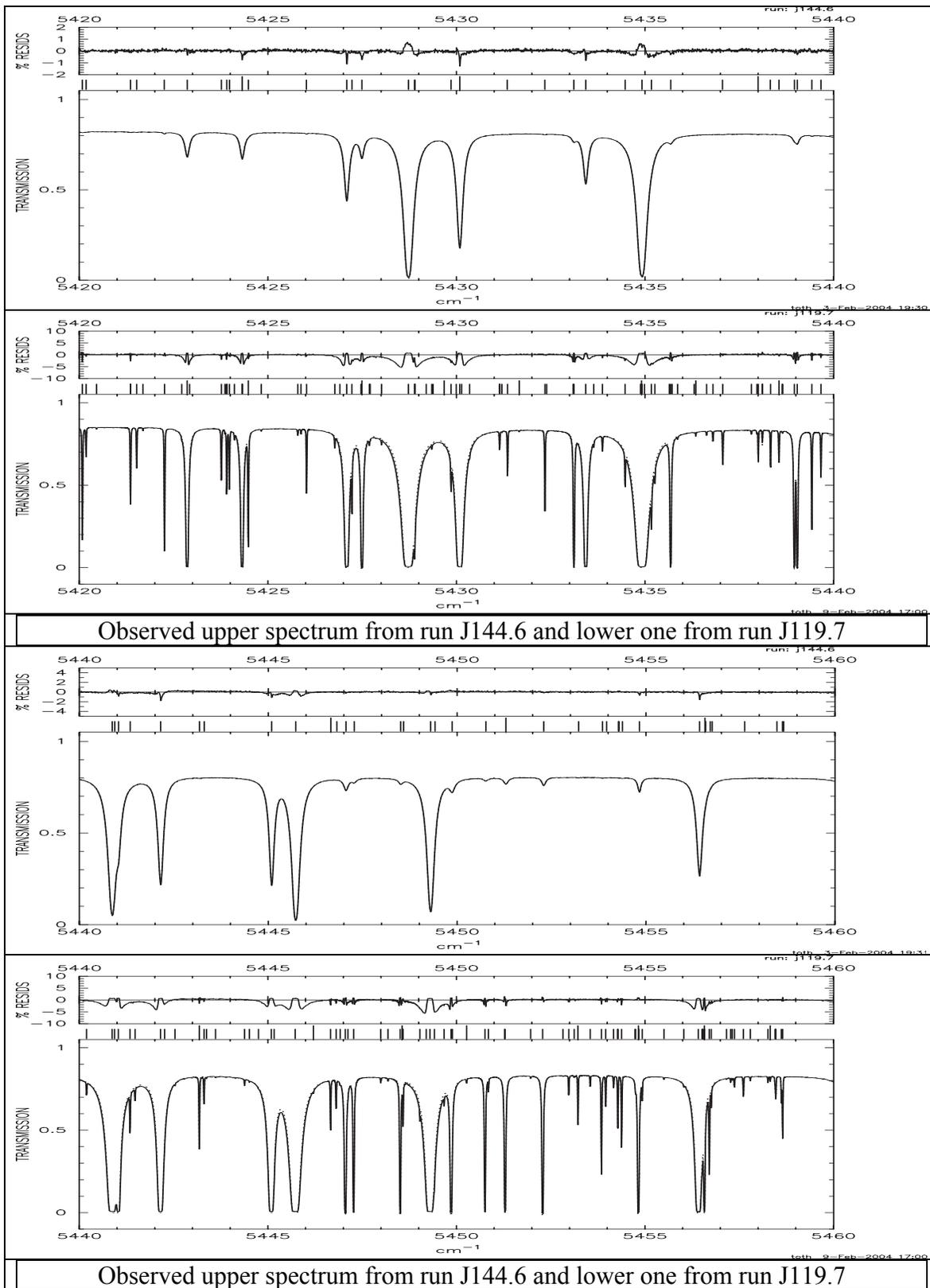


Figure B20. Observed and computed spectra of H₂O

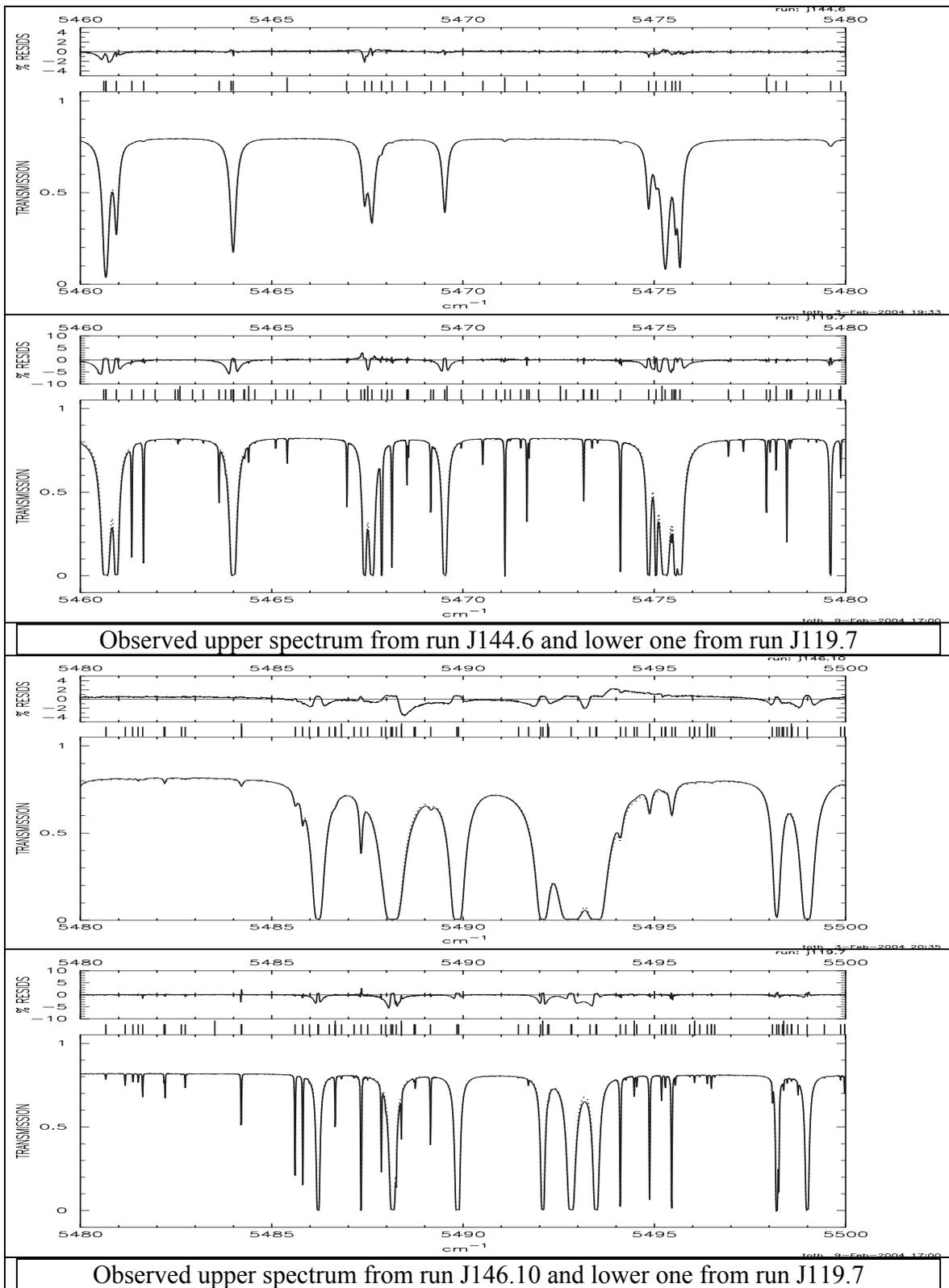


Figure B21. Observed and computed spectra of H₂O

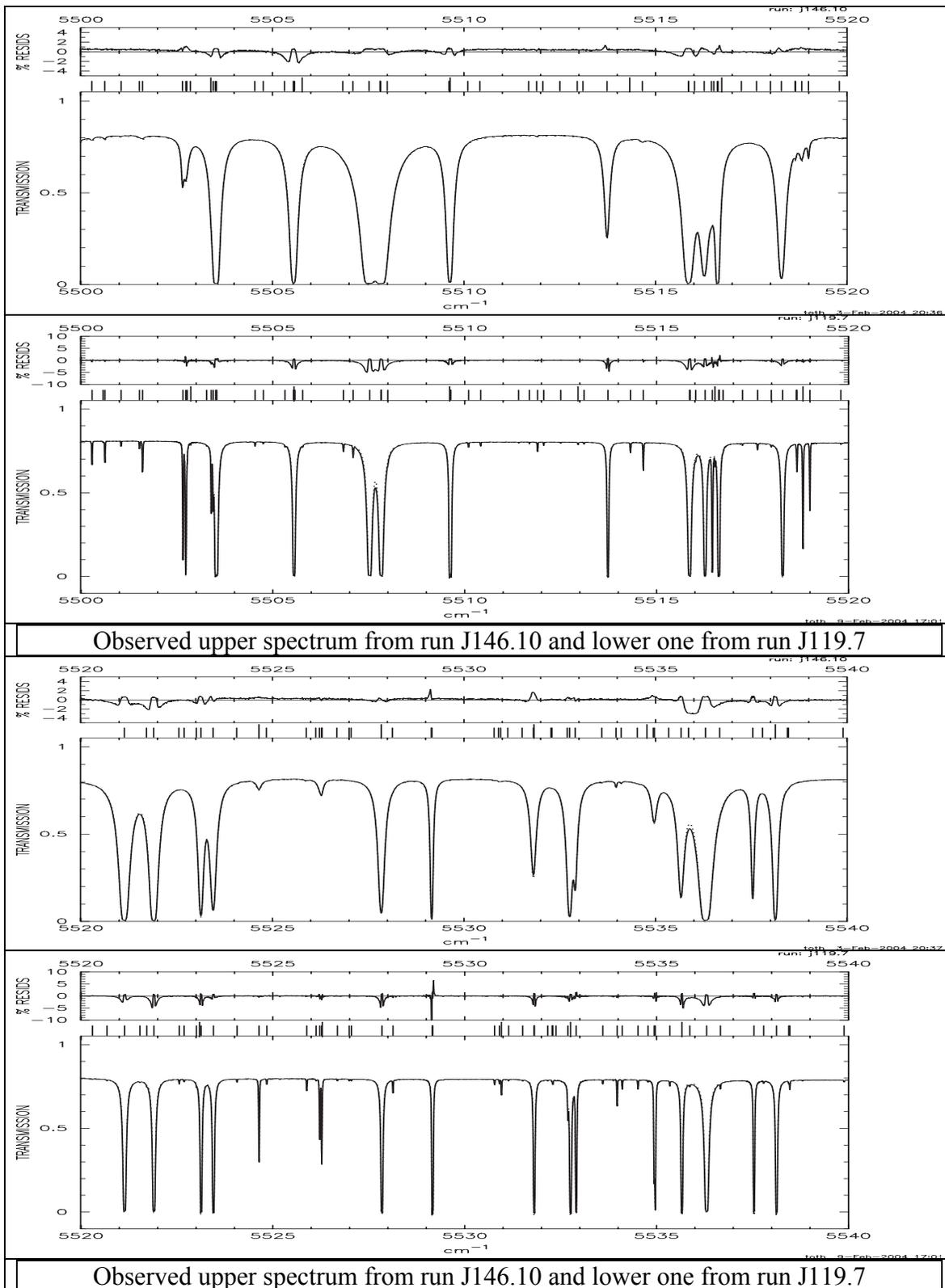


Figure B22. Observed and computed spectra of H₂O

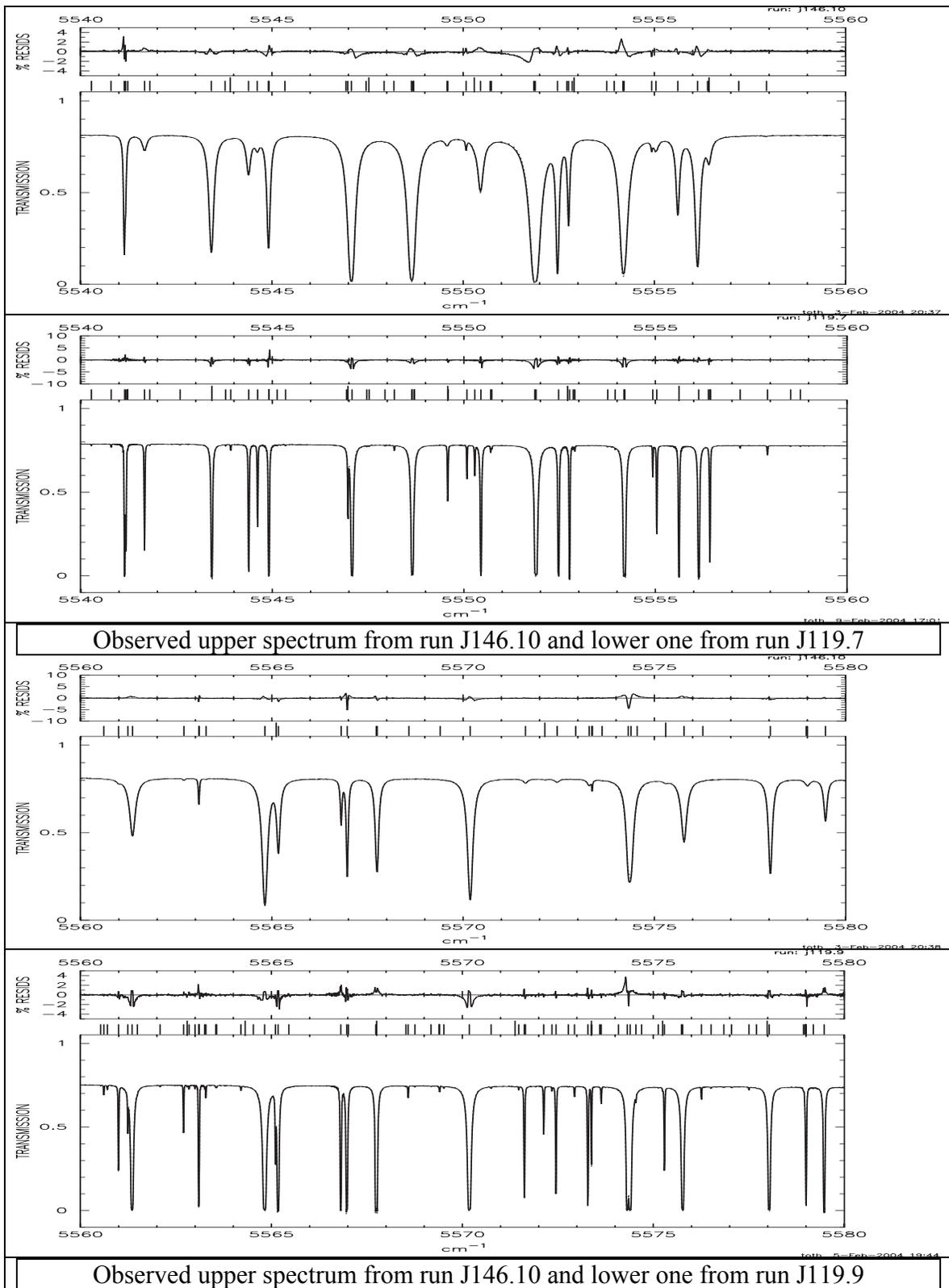


Figure B23. Observed and computed spectra of H₂O

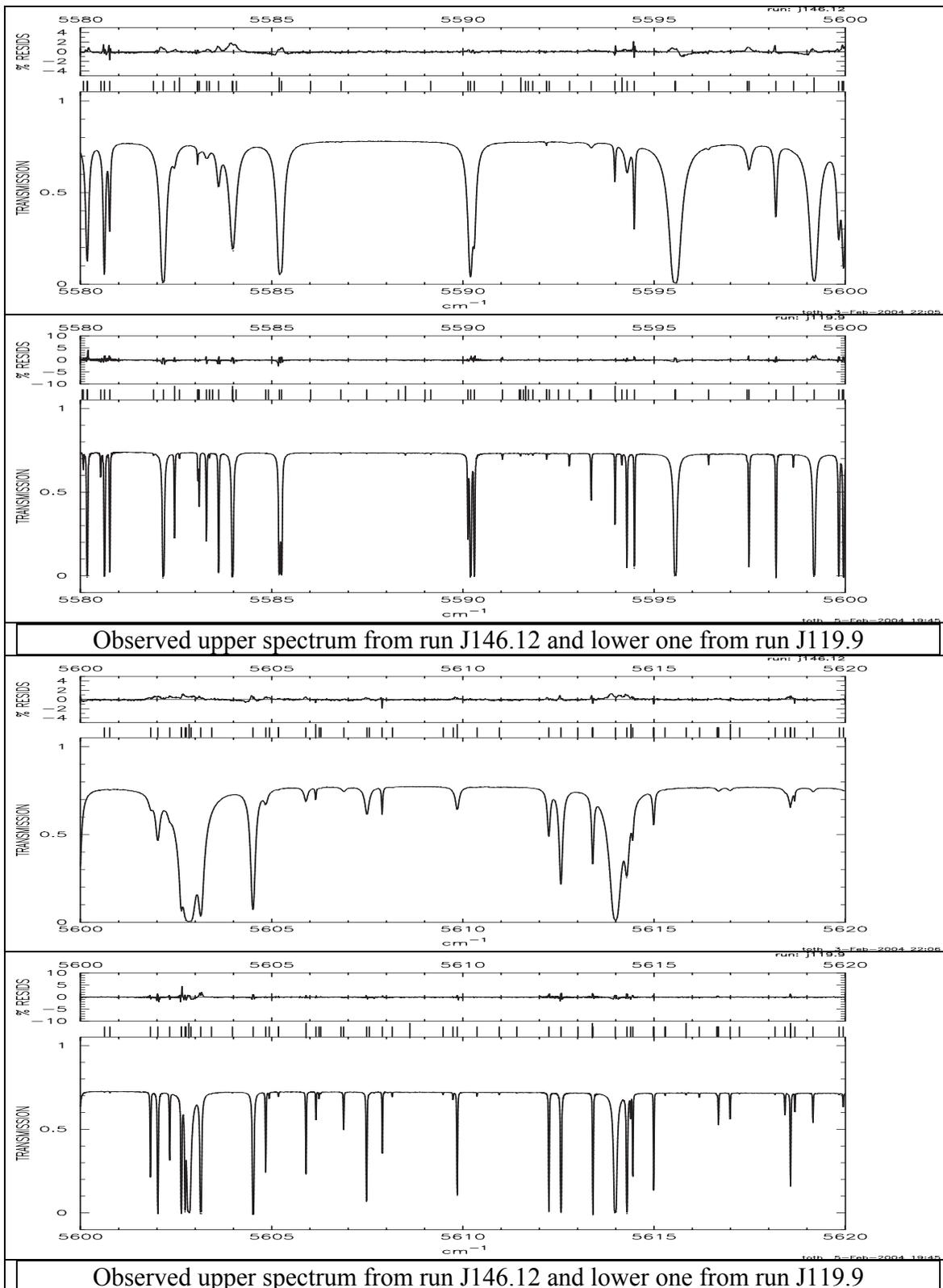


Figure B24. Observed and computed spectra of H₂O

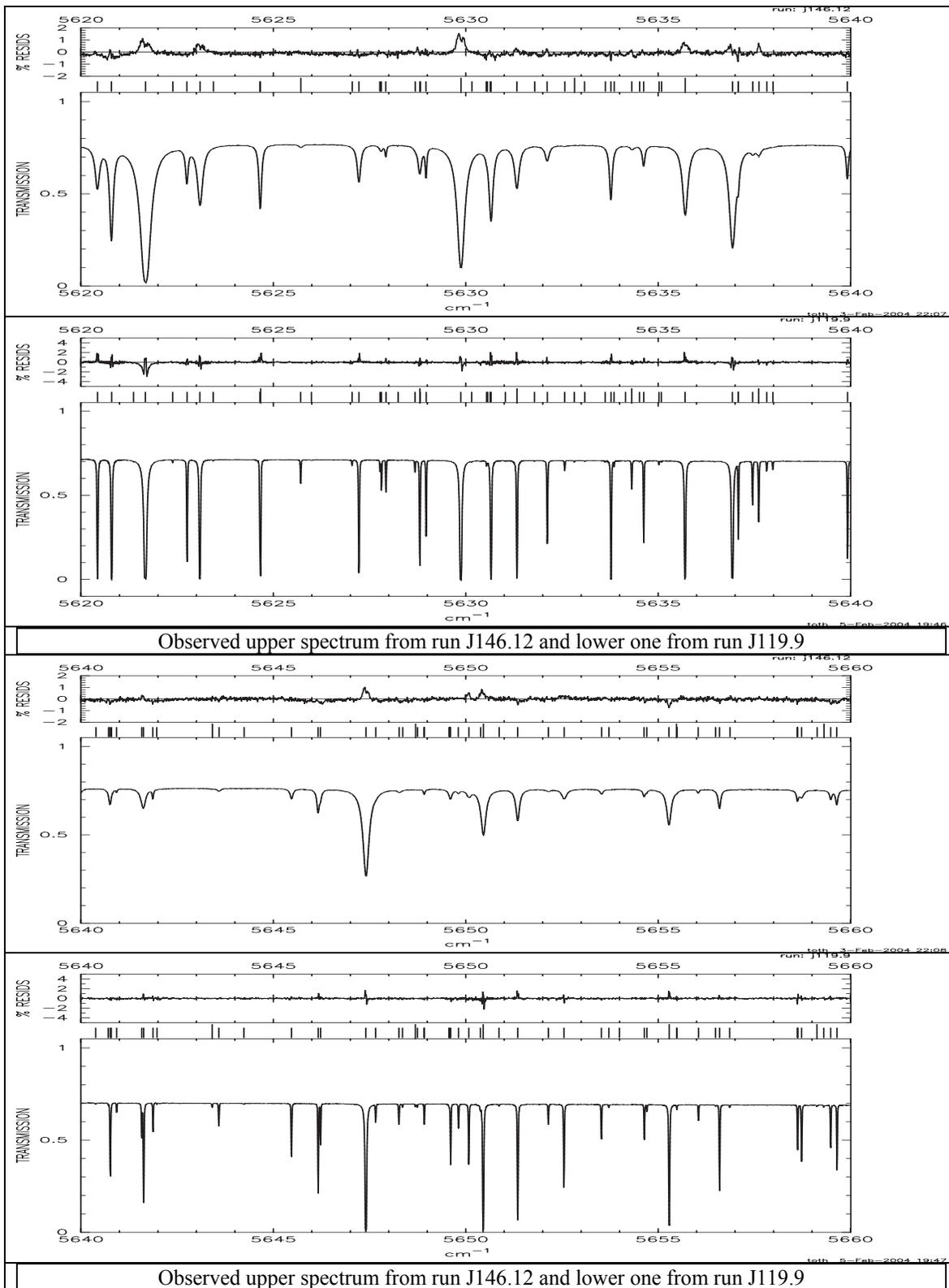
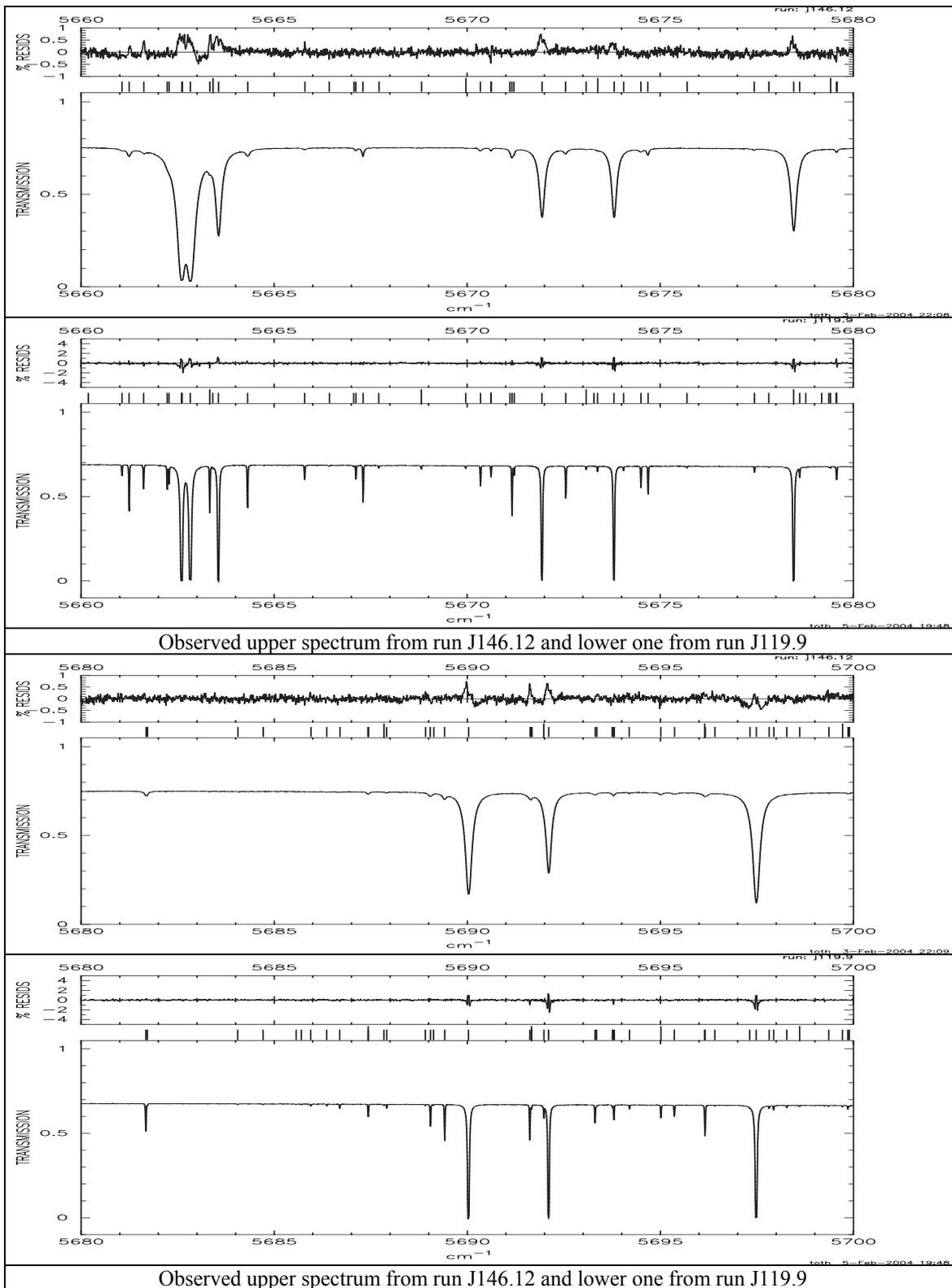


Figure B25. Observed and computed spectra of H₂O



Observed upper spectrum from run J146.12 and lower one from run J119.9

Observed upper spectrum from run J146.12 and lower one from run J119.9

Figure B26. Observed and computed spectra of H₂O

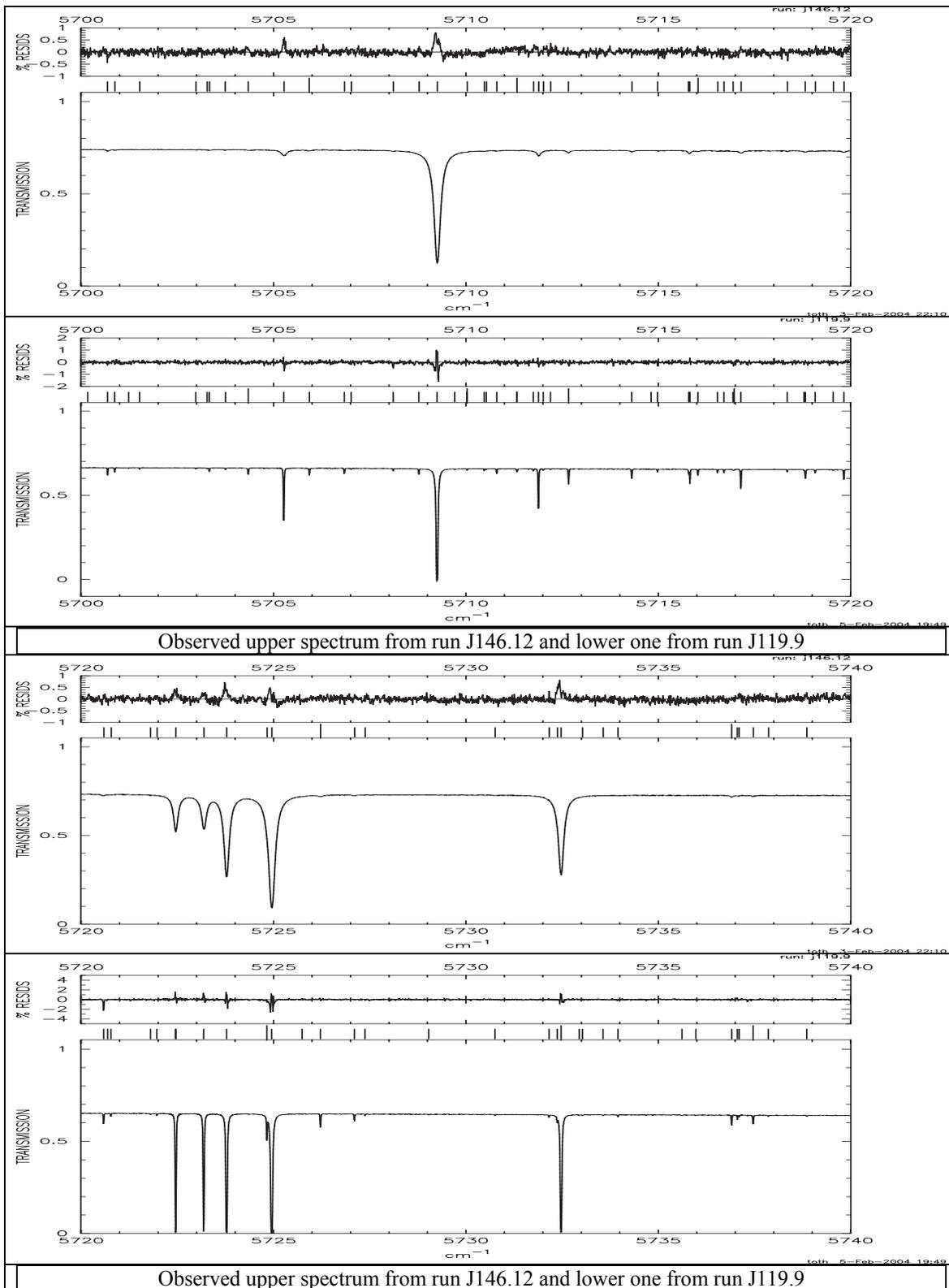
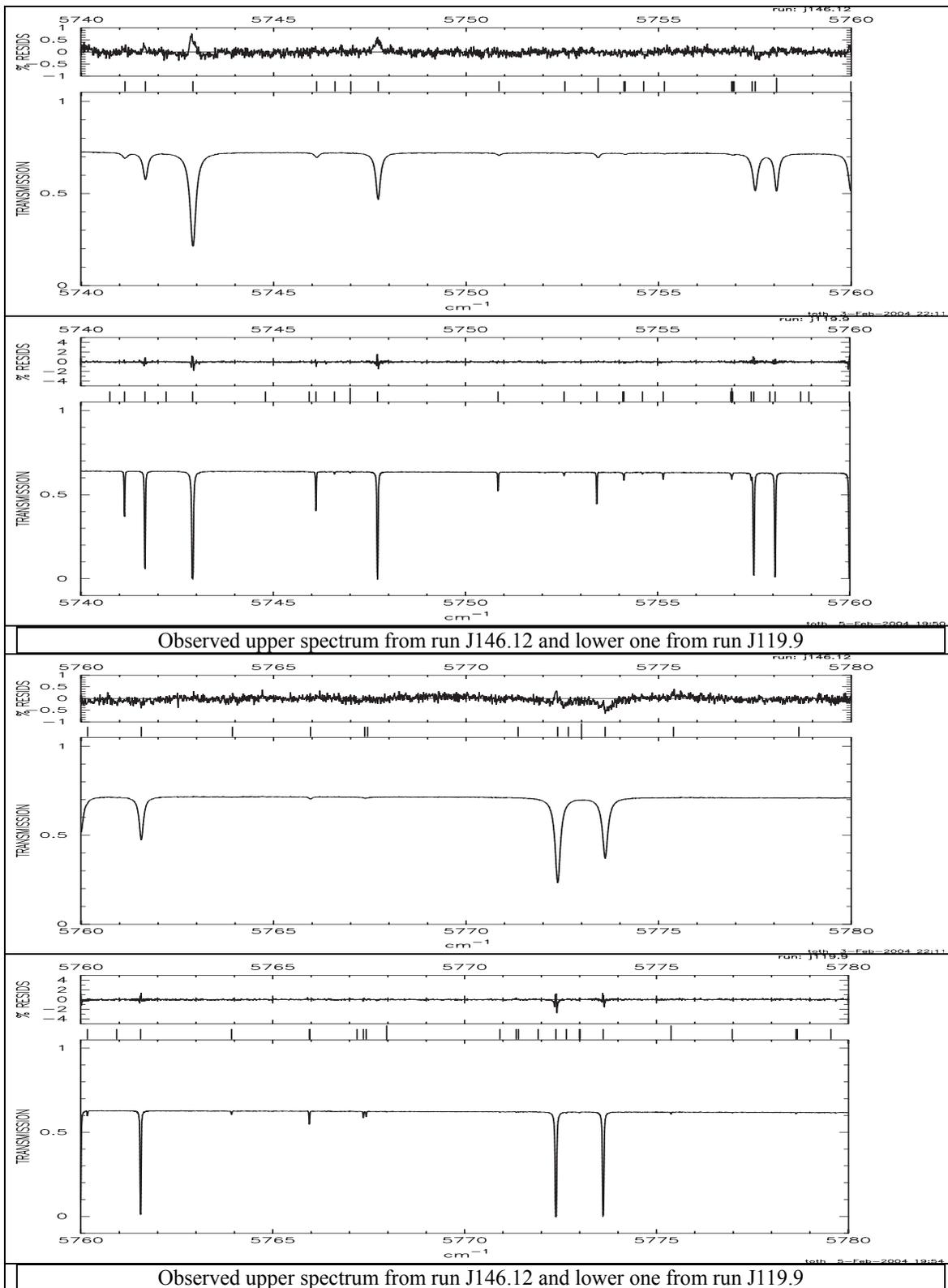


Figure B27. Observed and computed spectra of H₂O



Observed upper spectrum from run J146.12 and lower one from run J119.9

Observed upper spectrum from run J146.12 and lower one from run J119.9

Figure B28. Observed and computed spectra of H₂O

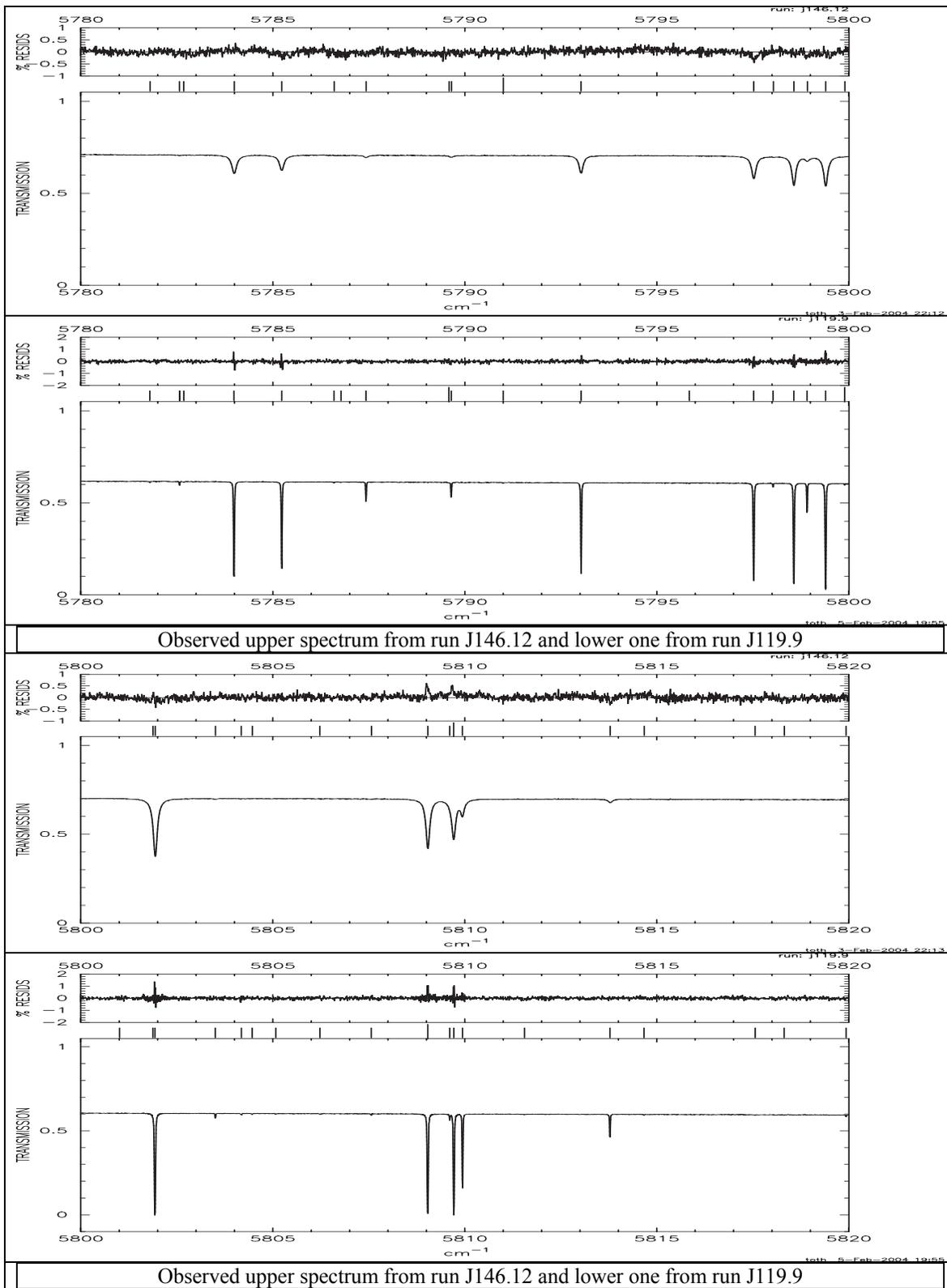


Figure B29. Observed and computed spectra of H₂O

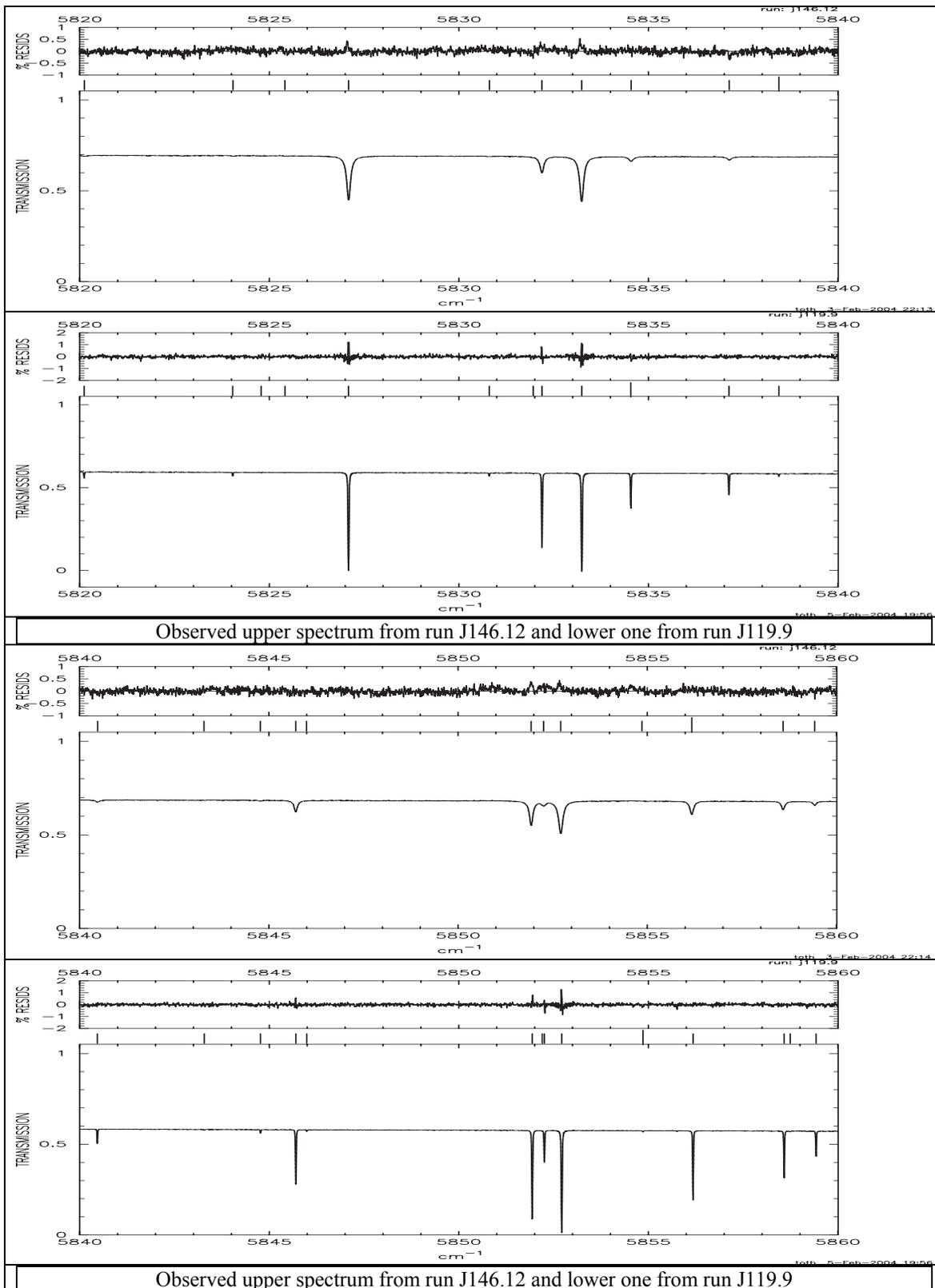


Figure B30. Observed and computed spectra of H₂O

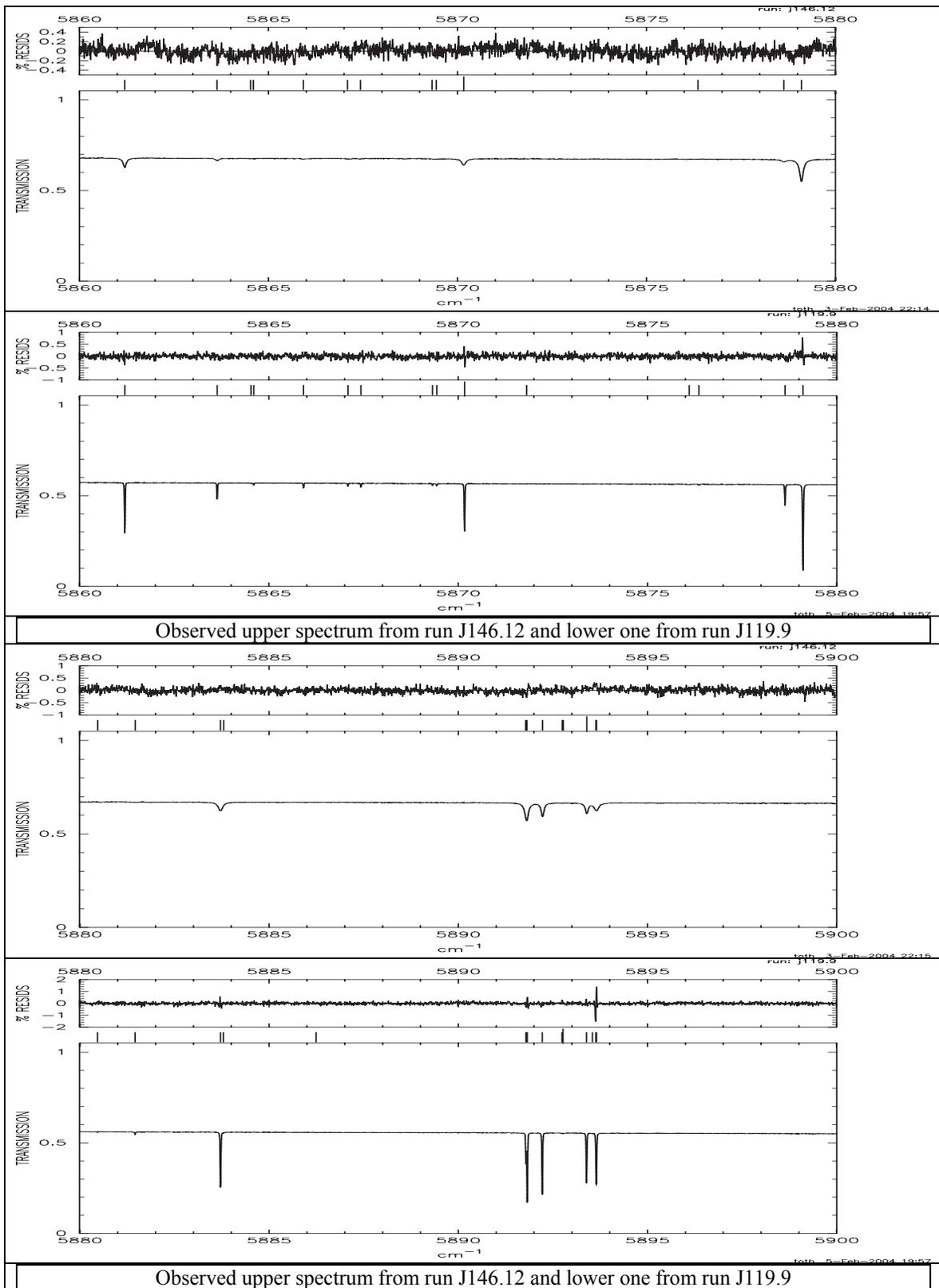


Figure B31. Observed and computed spectra of H₂O

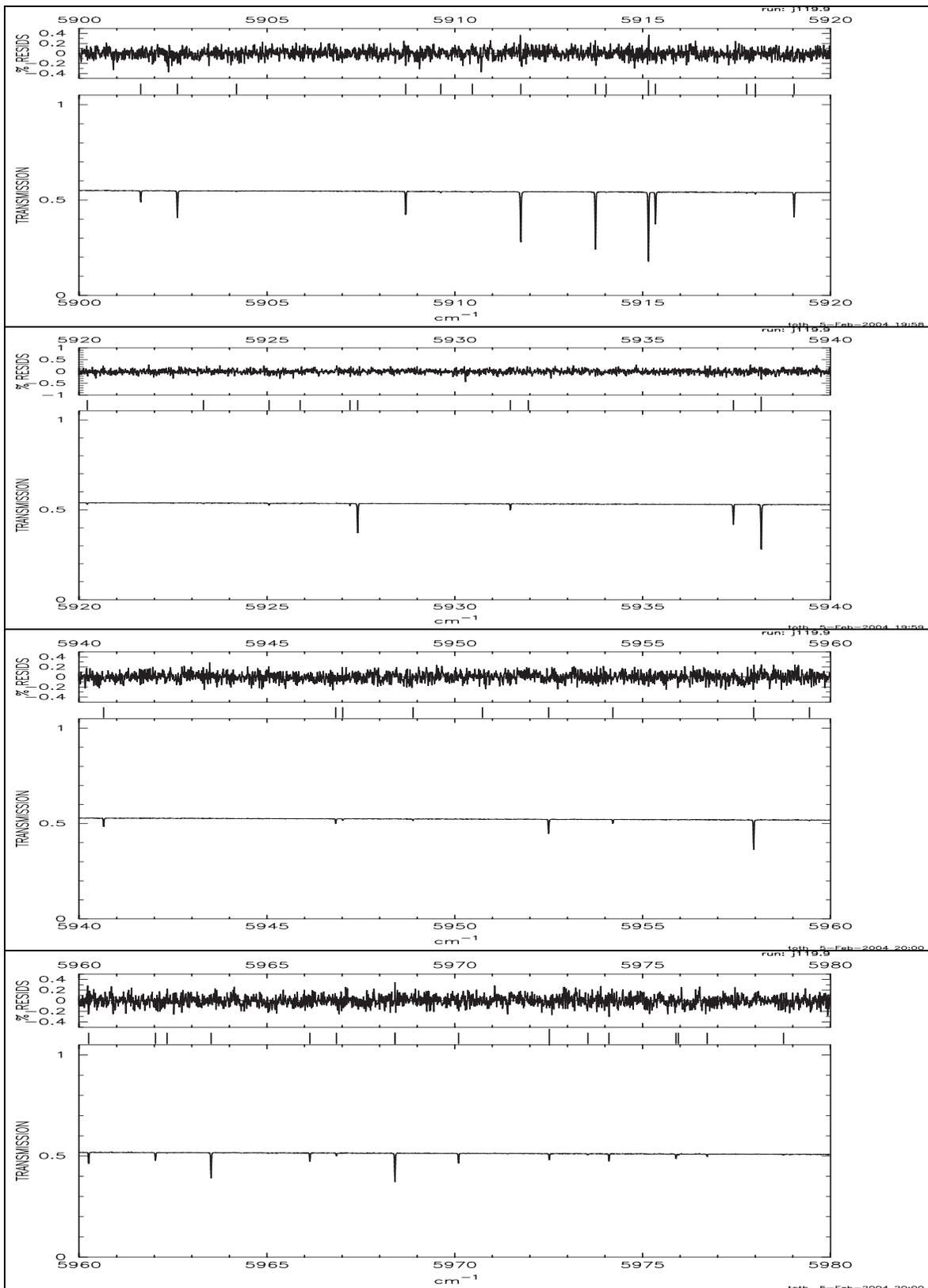


Figure B32. Observed and computed spectra of H₂O. Observed spectra from run J119.9

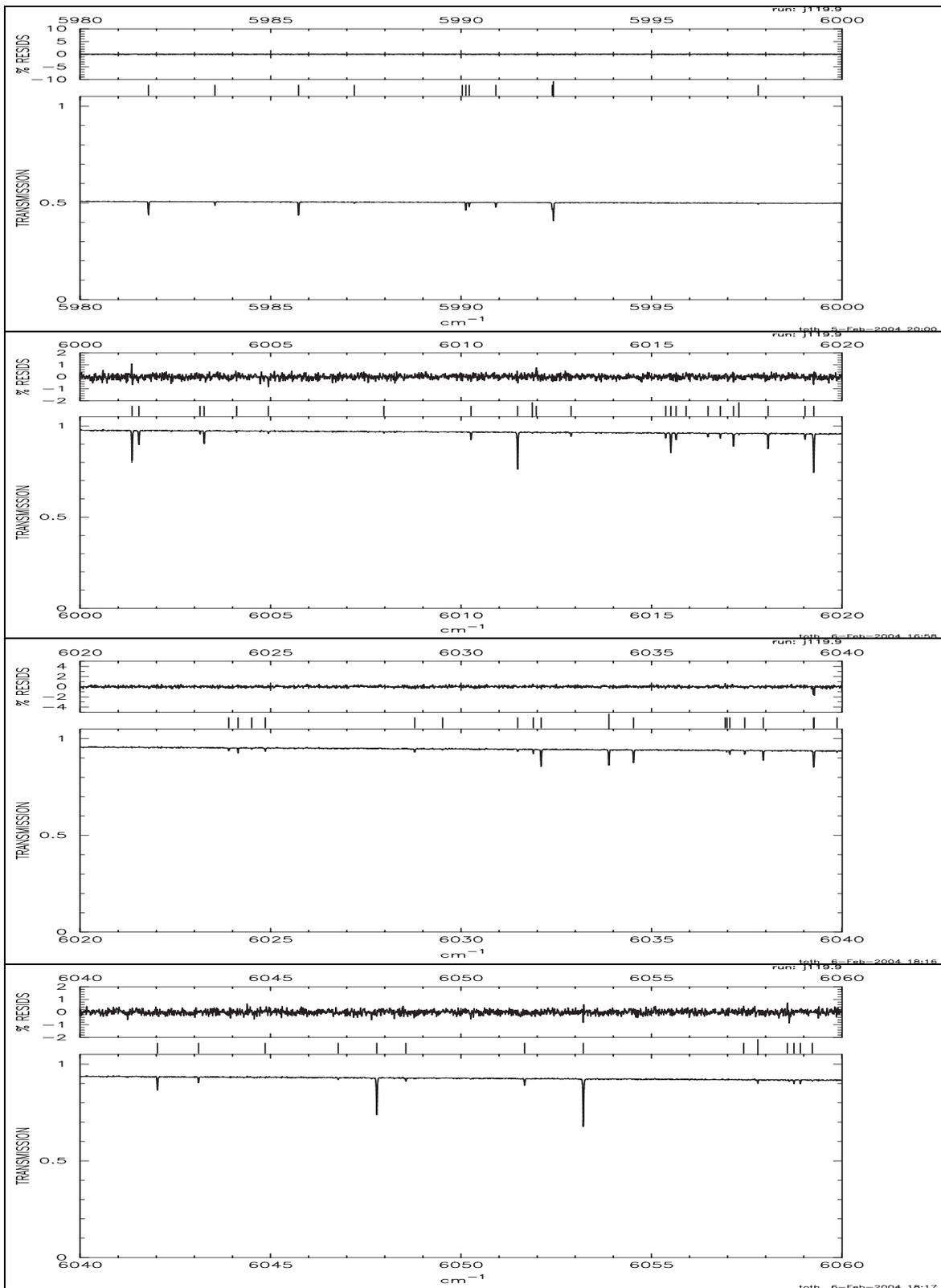


Figure B33. Observed and computed spectra of H₂O. Observed spectra from run J119.9

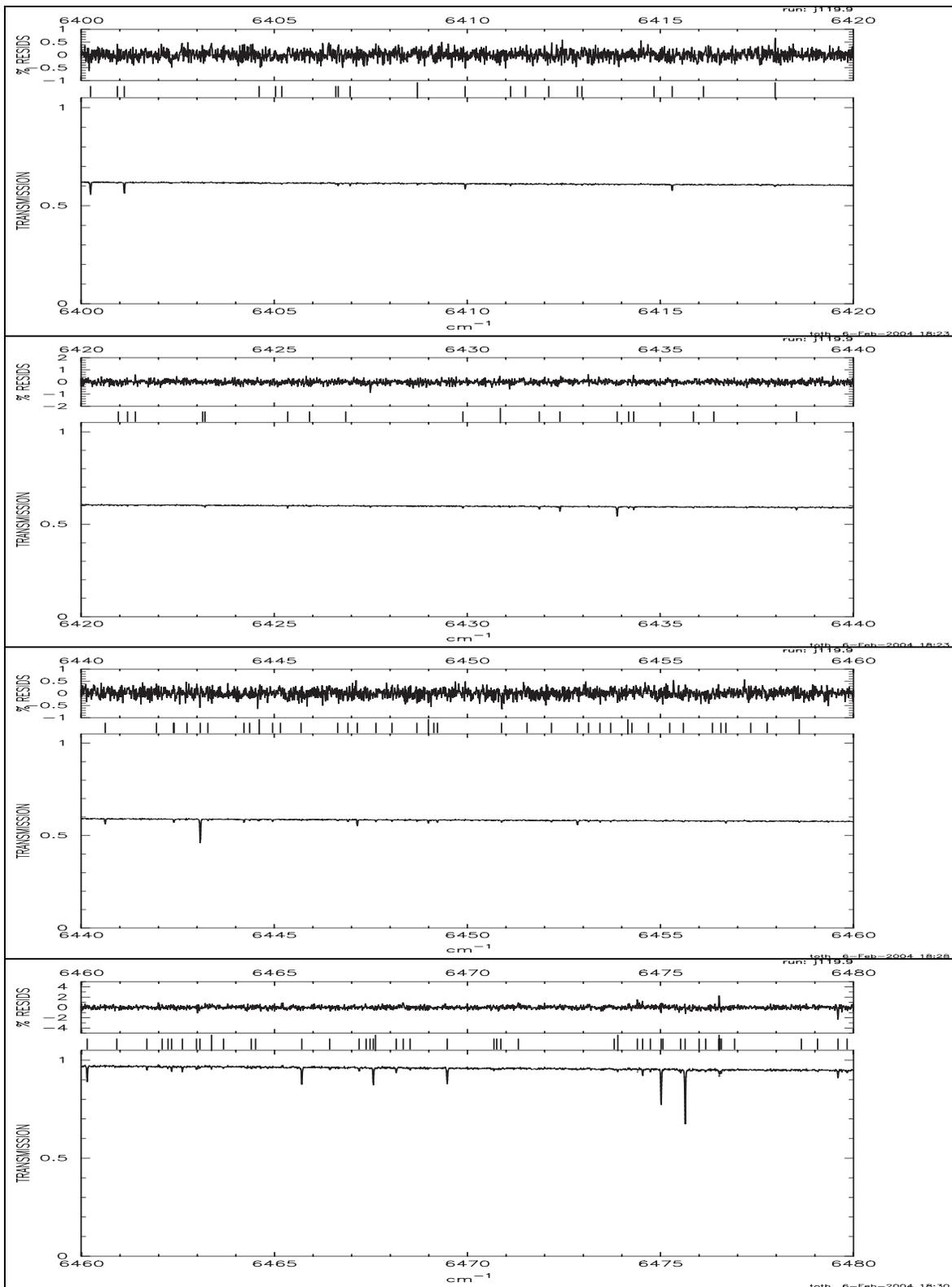


Figure B34. Observed and computed spectra of H₂O. Observed spectra from run J119.9

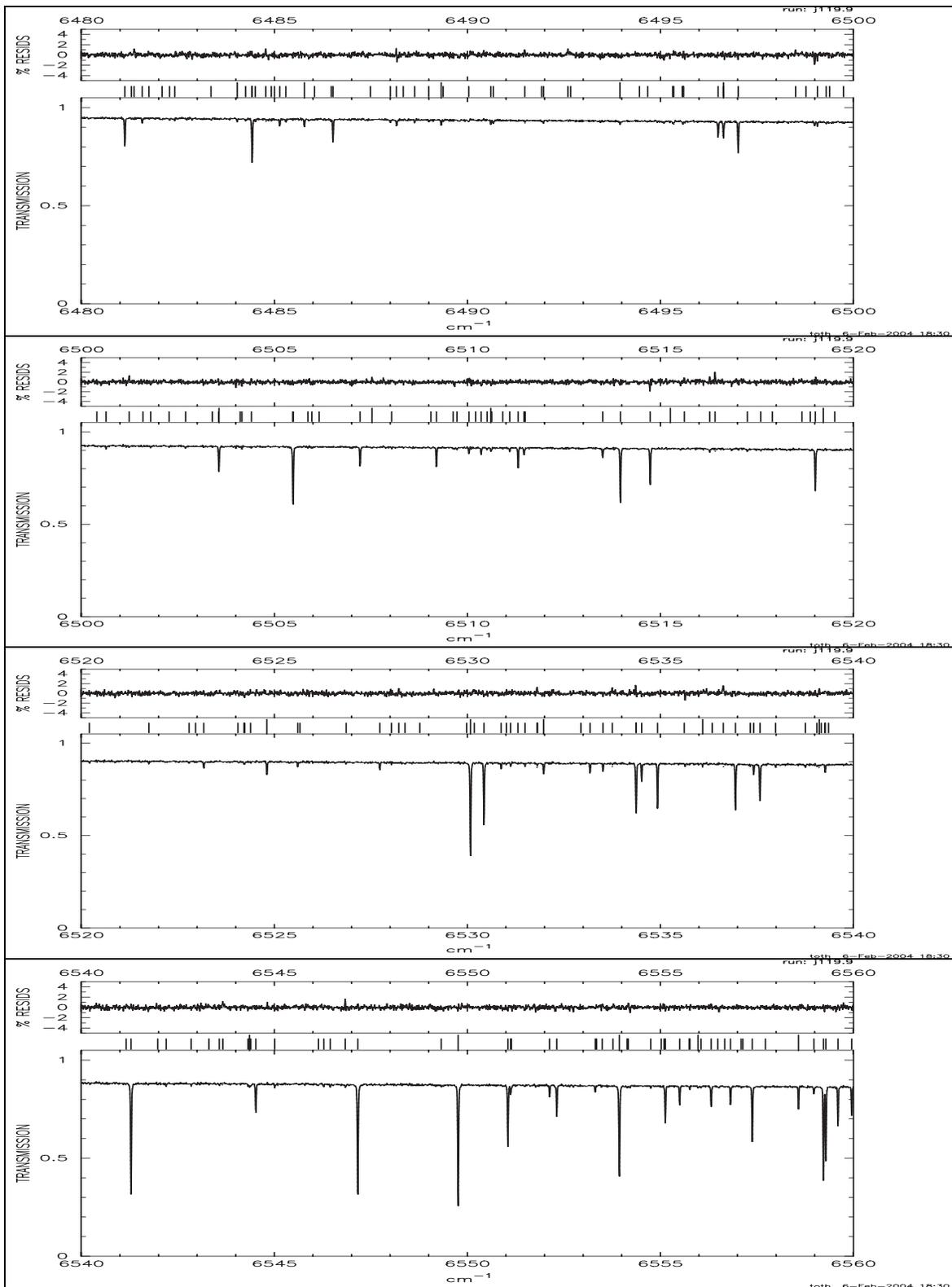


Figure B35. Observed and computed spectra of H₂O. Observed spectra from run J119.9

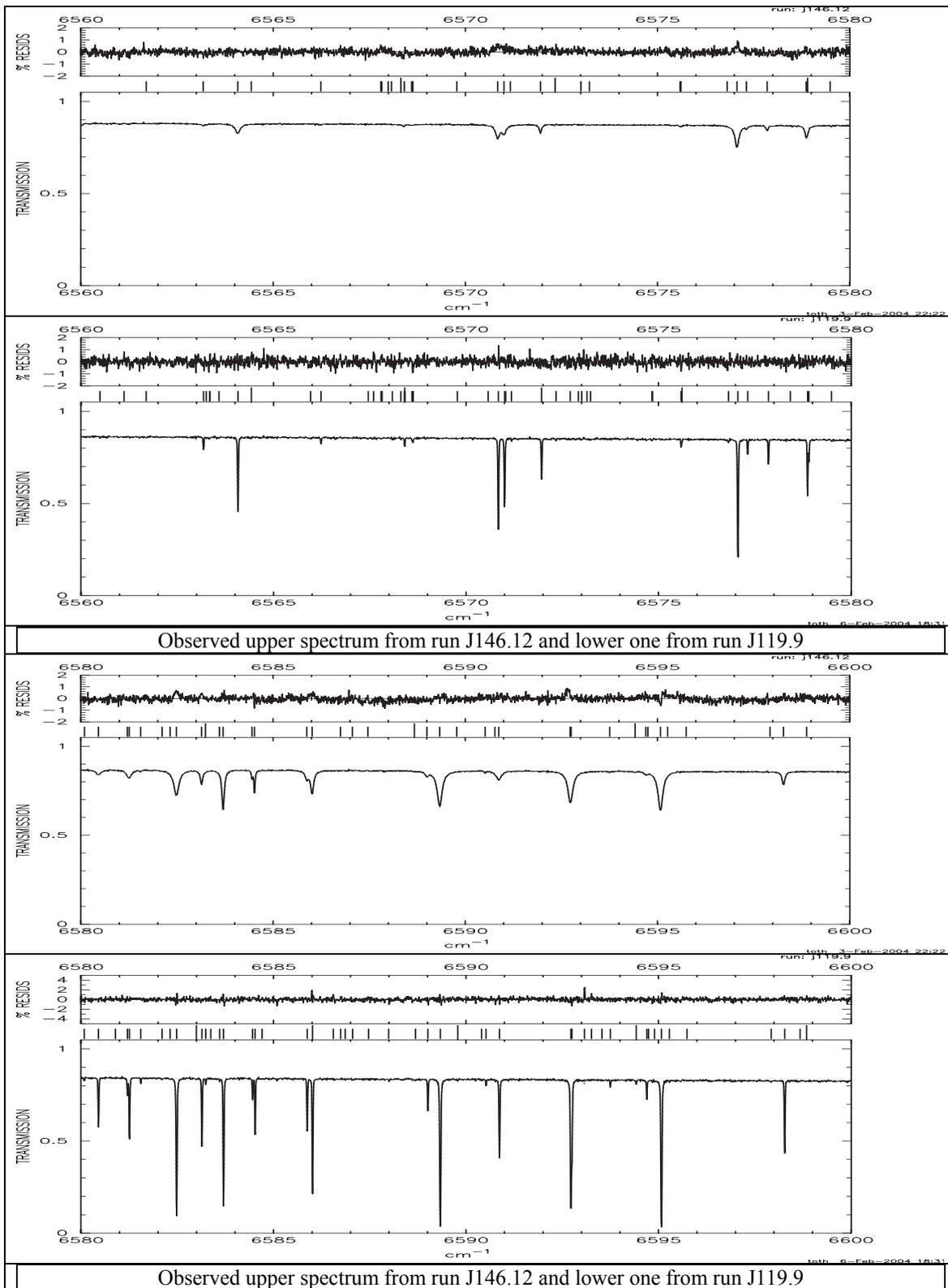
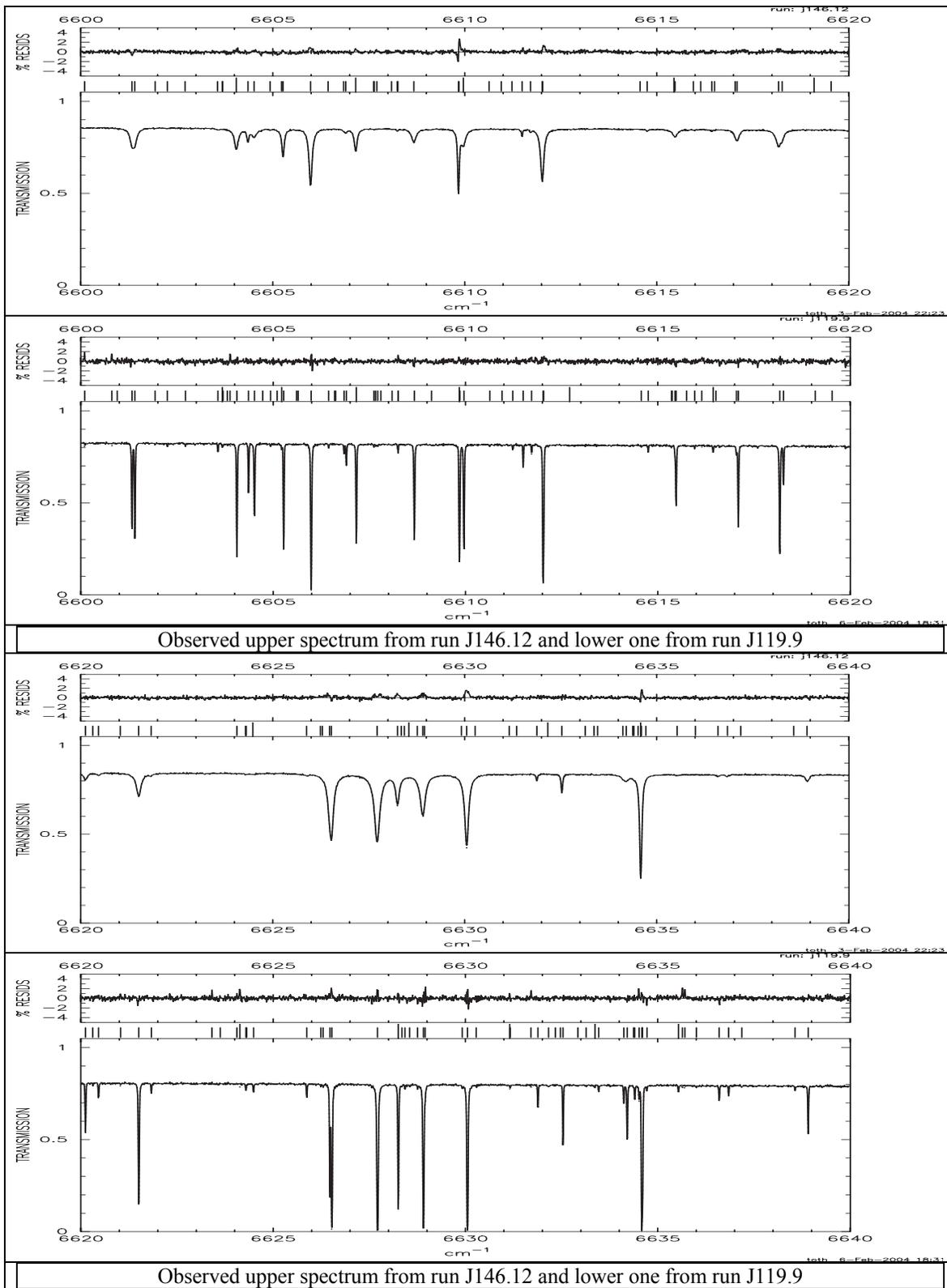


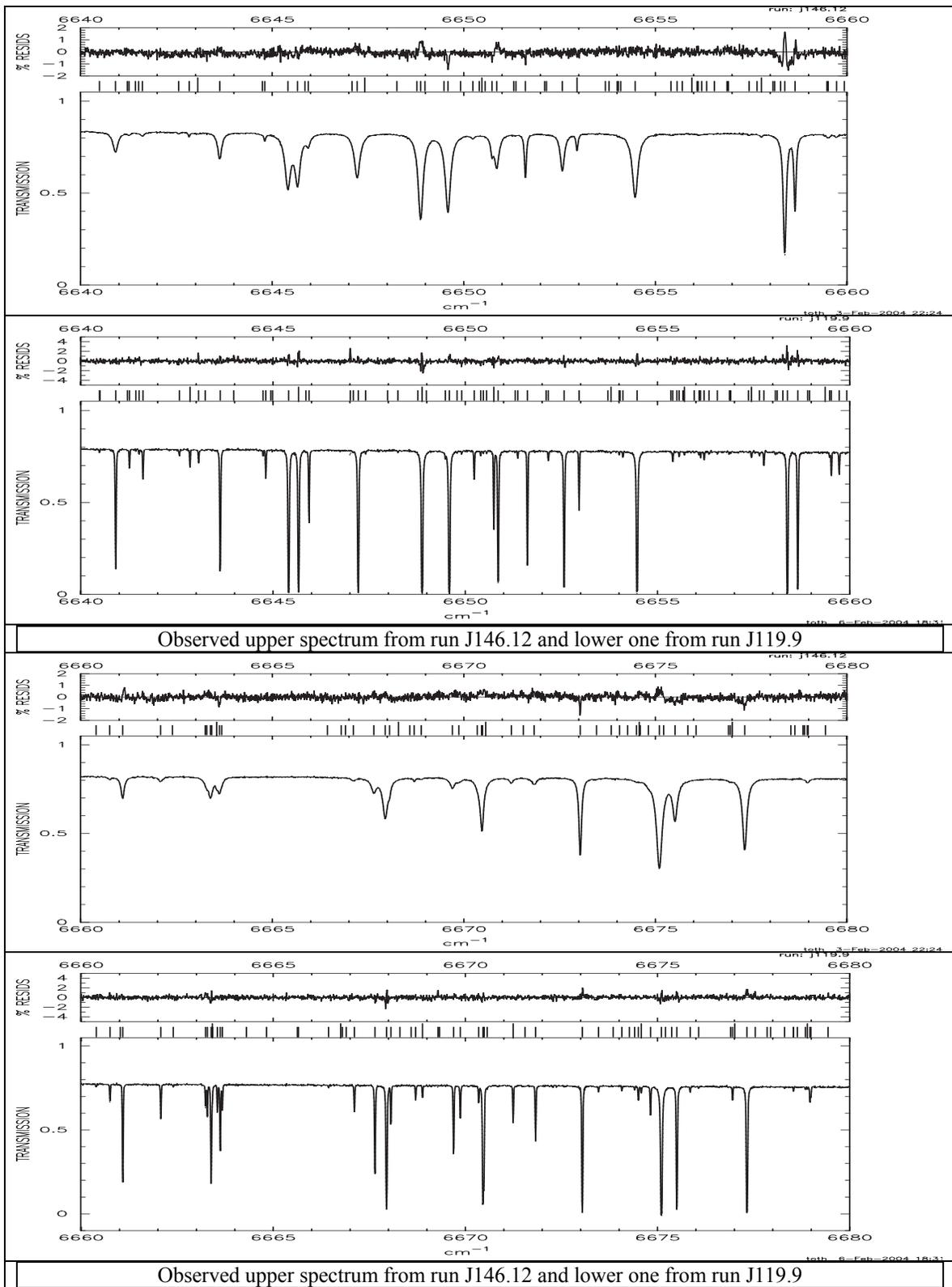
Figure B36. Observed and computed spectra of H₂O



Observed upper spectrum from run J146.12 and lower one from run J119.9

Observed upper spectrum from run J146.12 and lower one from run J119.9

Figure B37. Observed and computed spectra of H₂O



Observed upper spectrum from run J146.12 and lower one from run J119.9

Observed upper spectrum from run J146.12 and lower one from run J119.9

Figure B38. Observed and computed spectra of H₂O

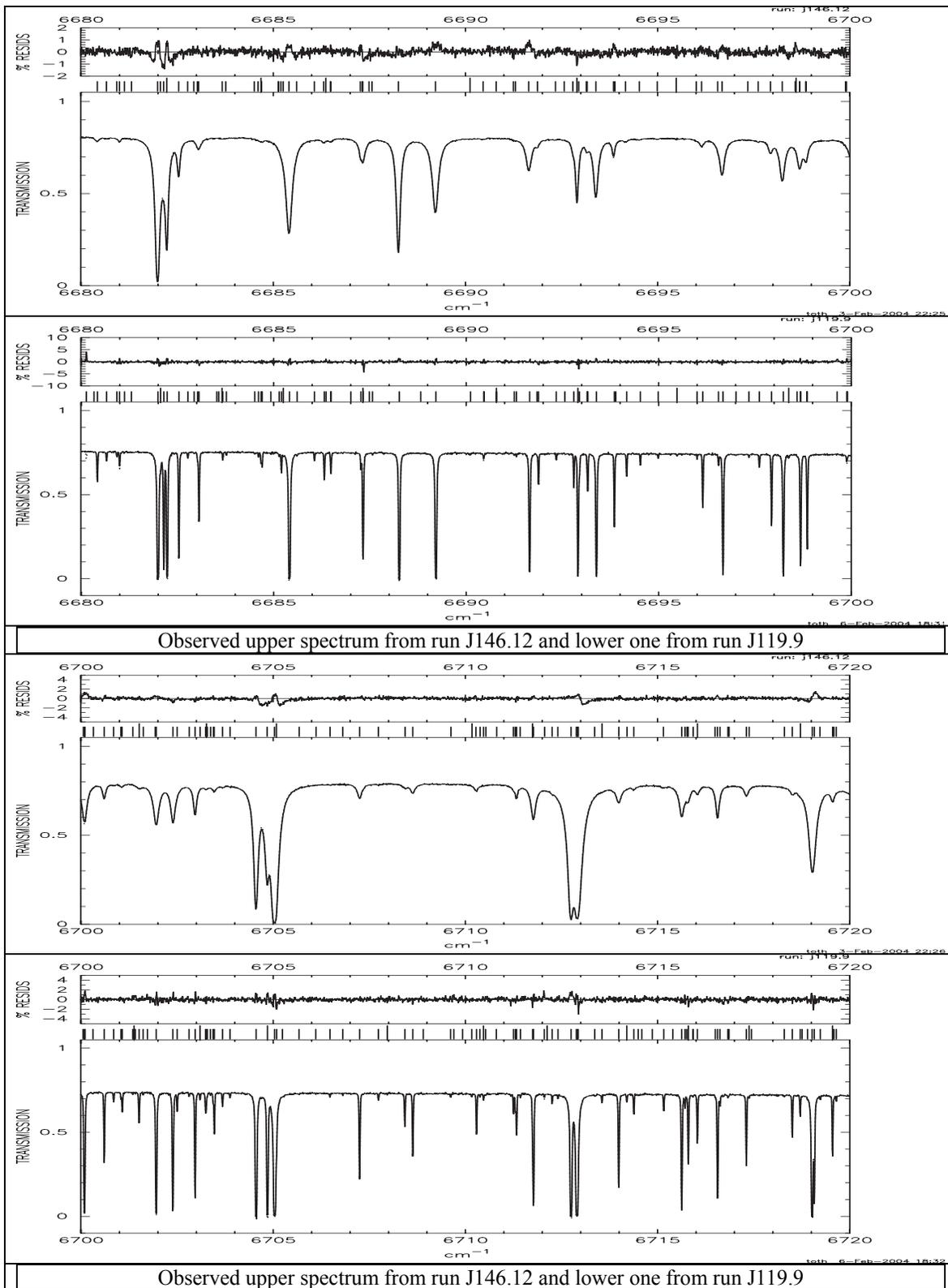


Figure B39. Observed and computed spectra of H₂O

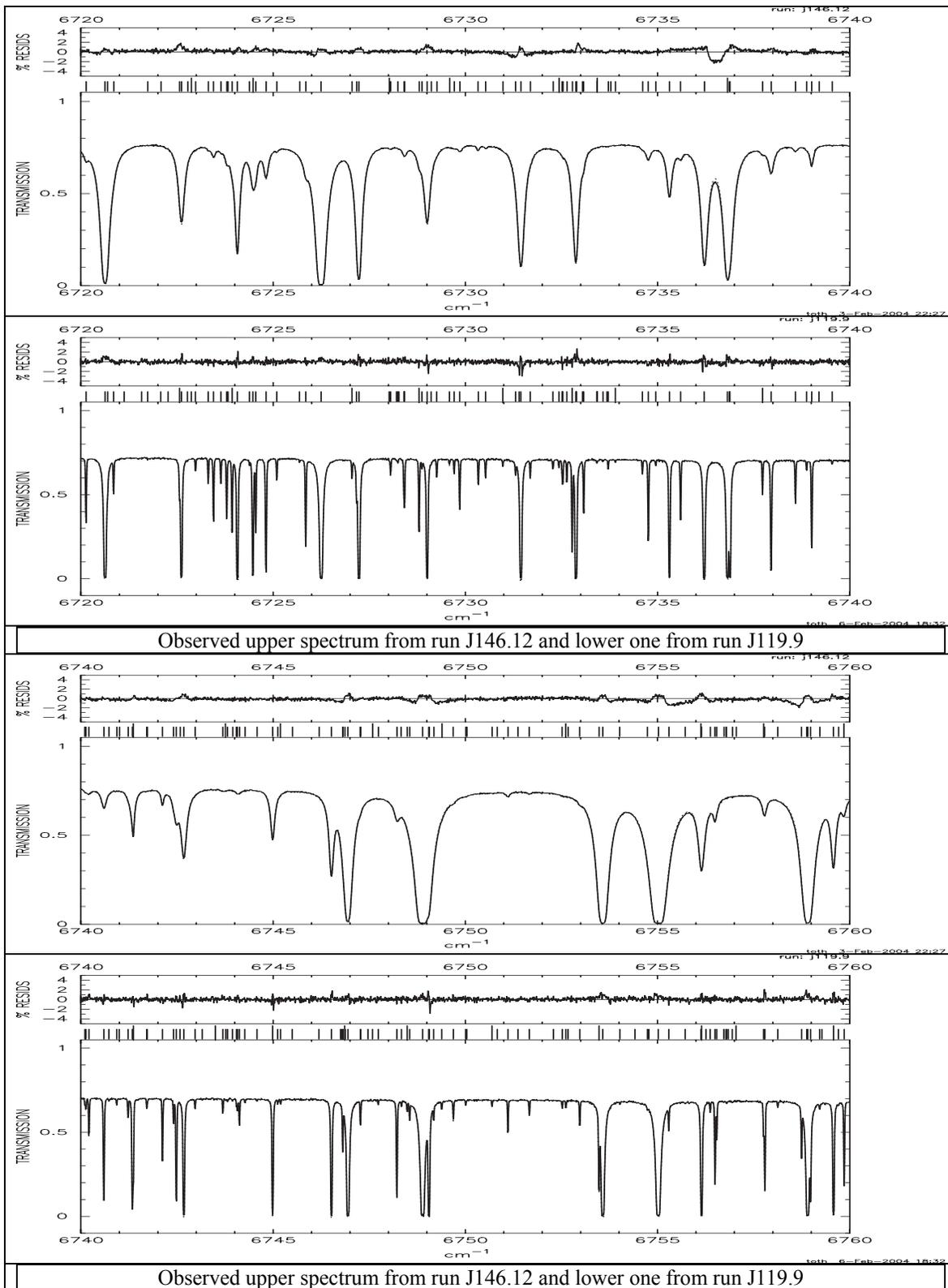


figure B40. Observed and computed spectra of H₂O

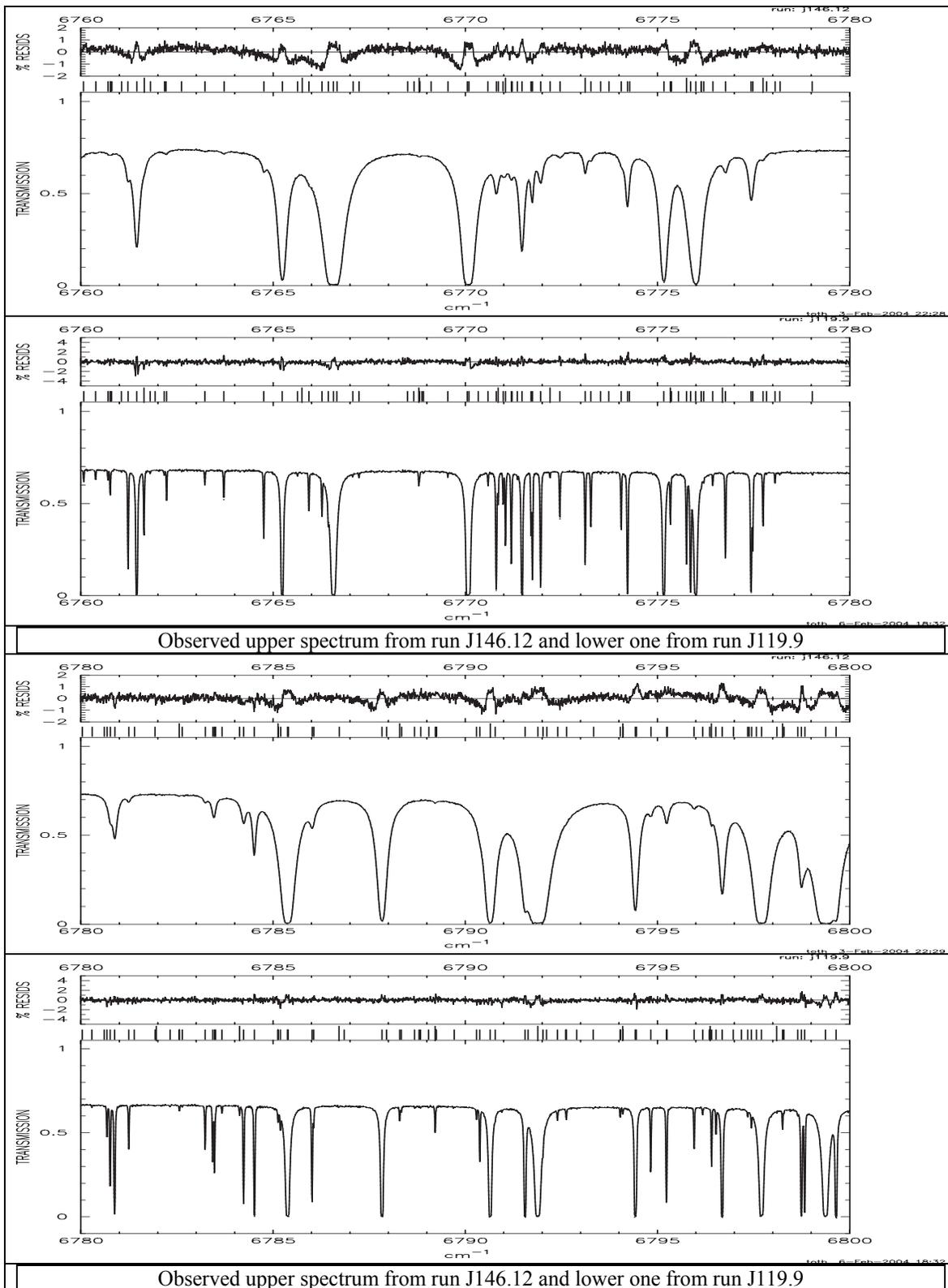


Figure B41. Observed and computed spectra of H₂O

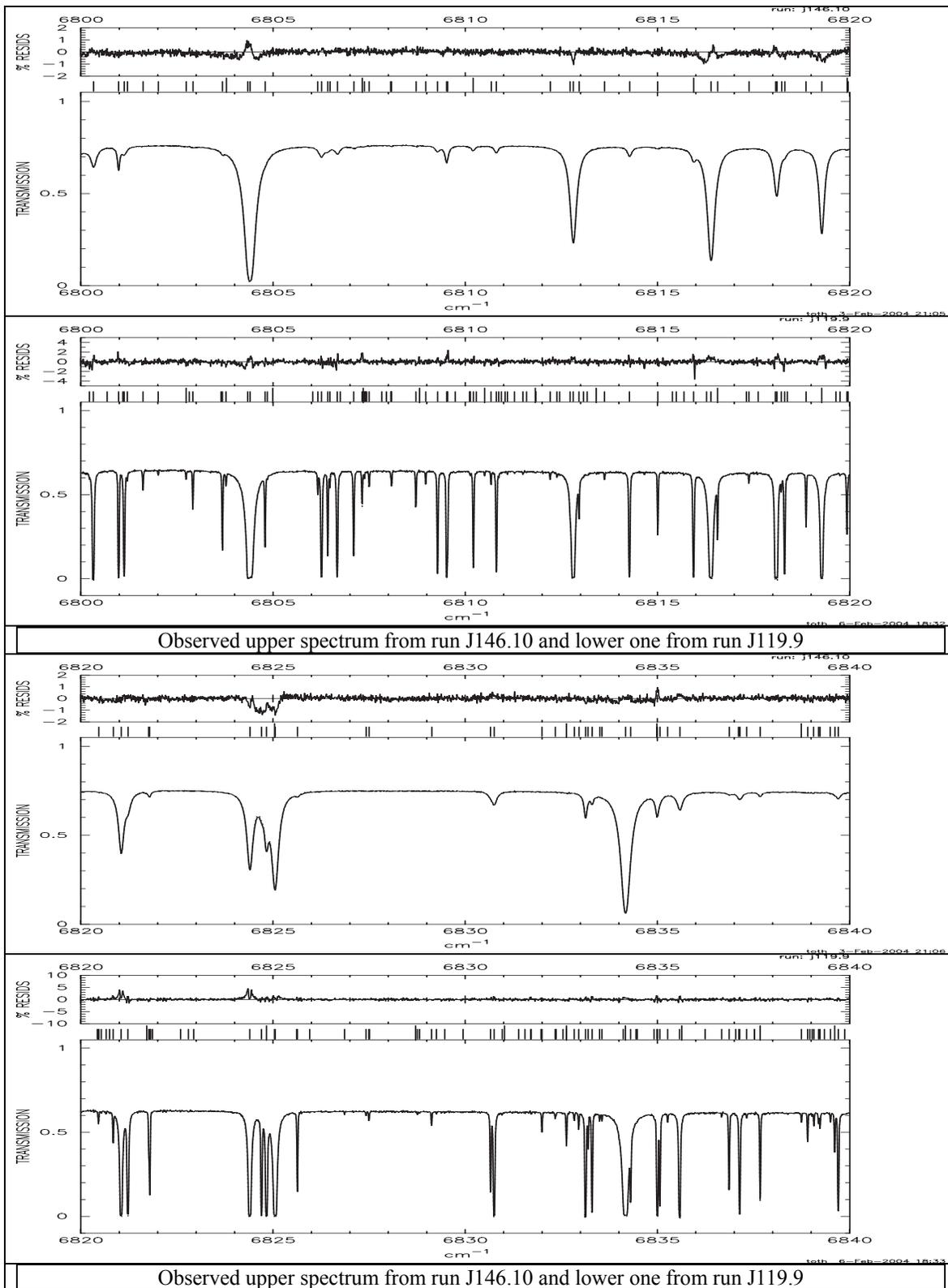


Figure B42. Observed and computed spectra of H₂O

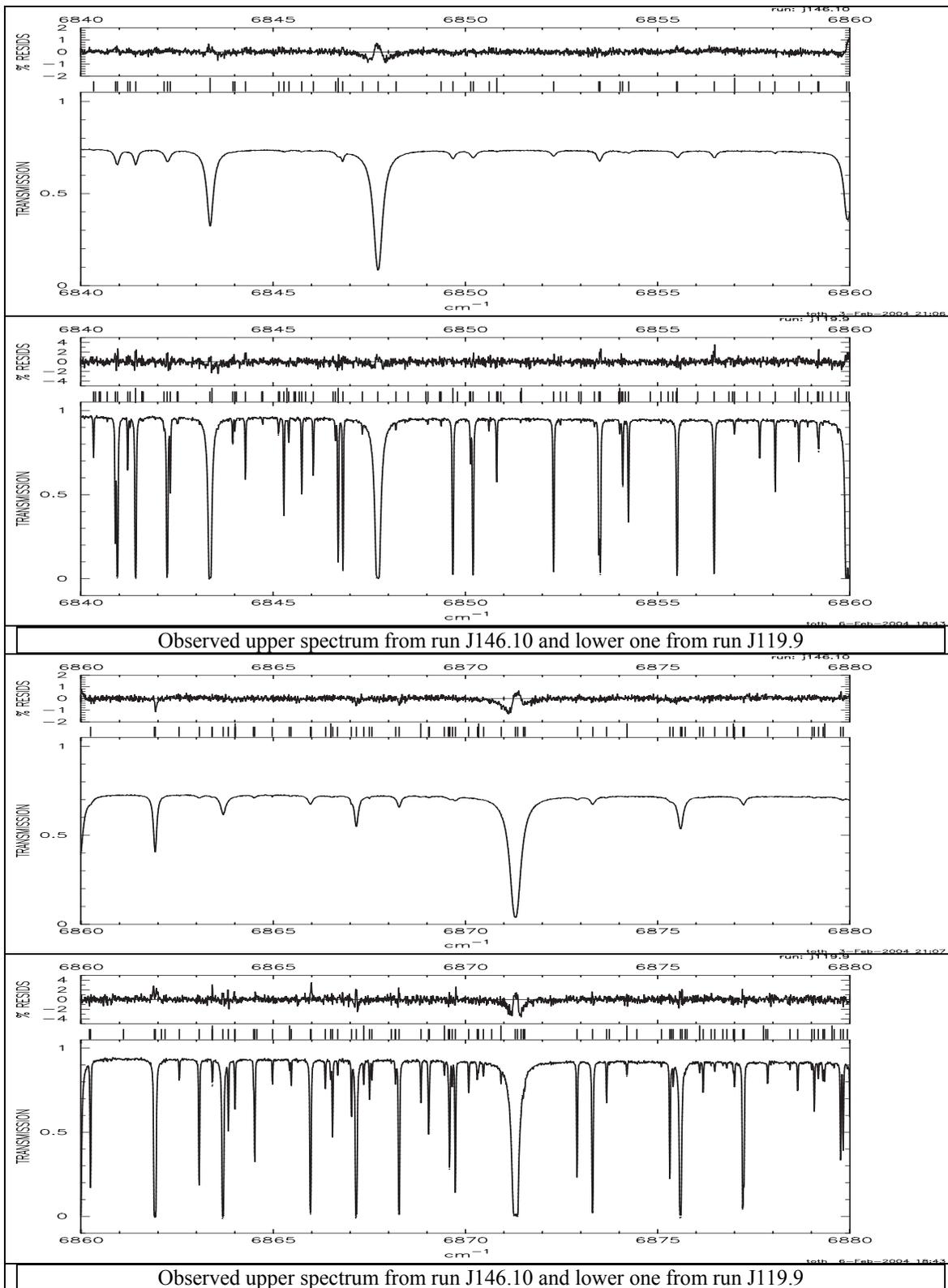


Figure B43. Observed and computed spectra of H₂O

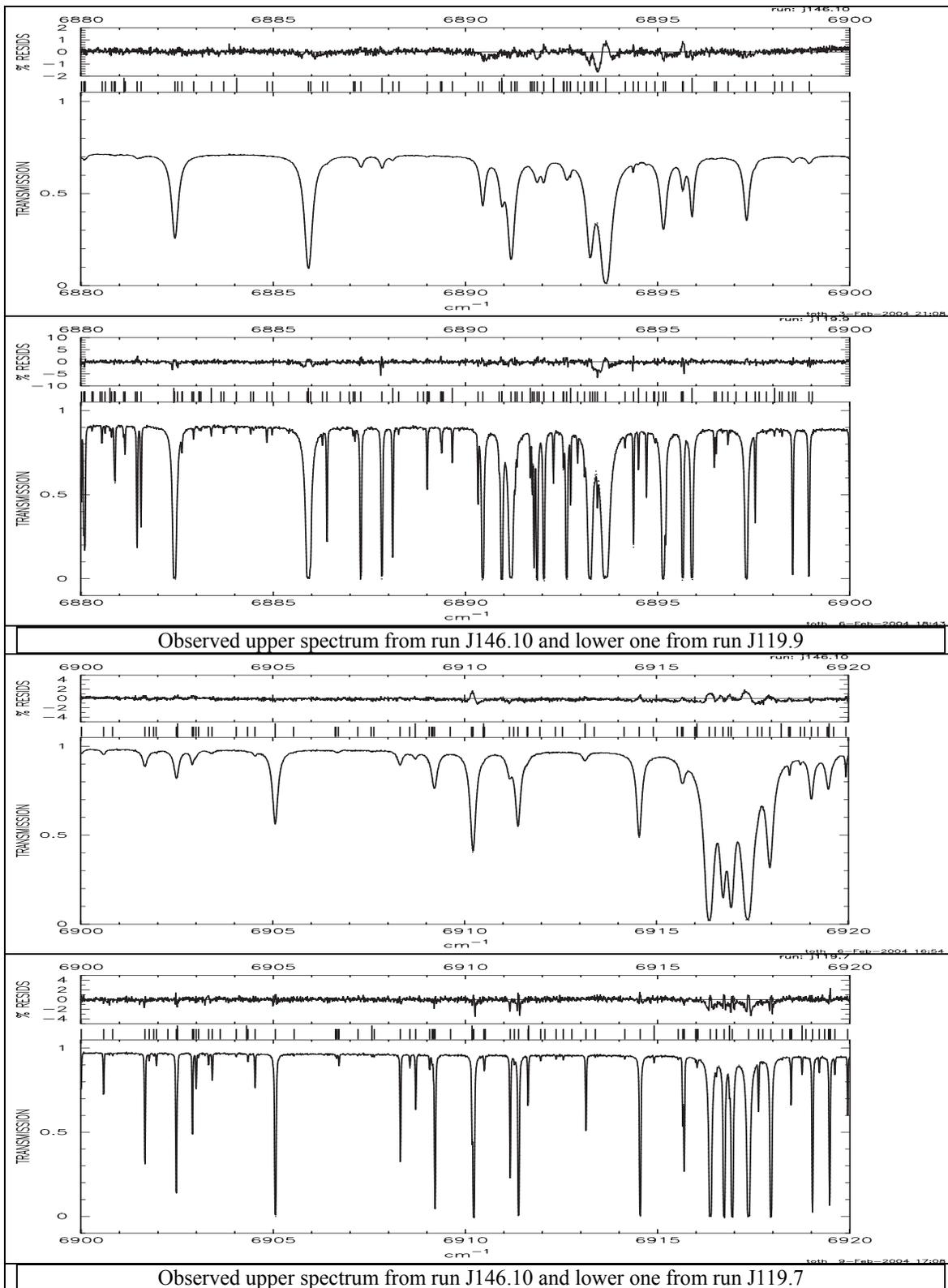


Figure B44. Observed and computed spectra of H₂O

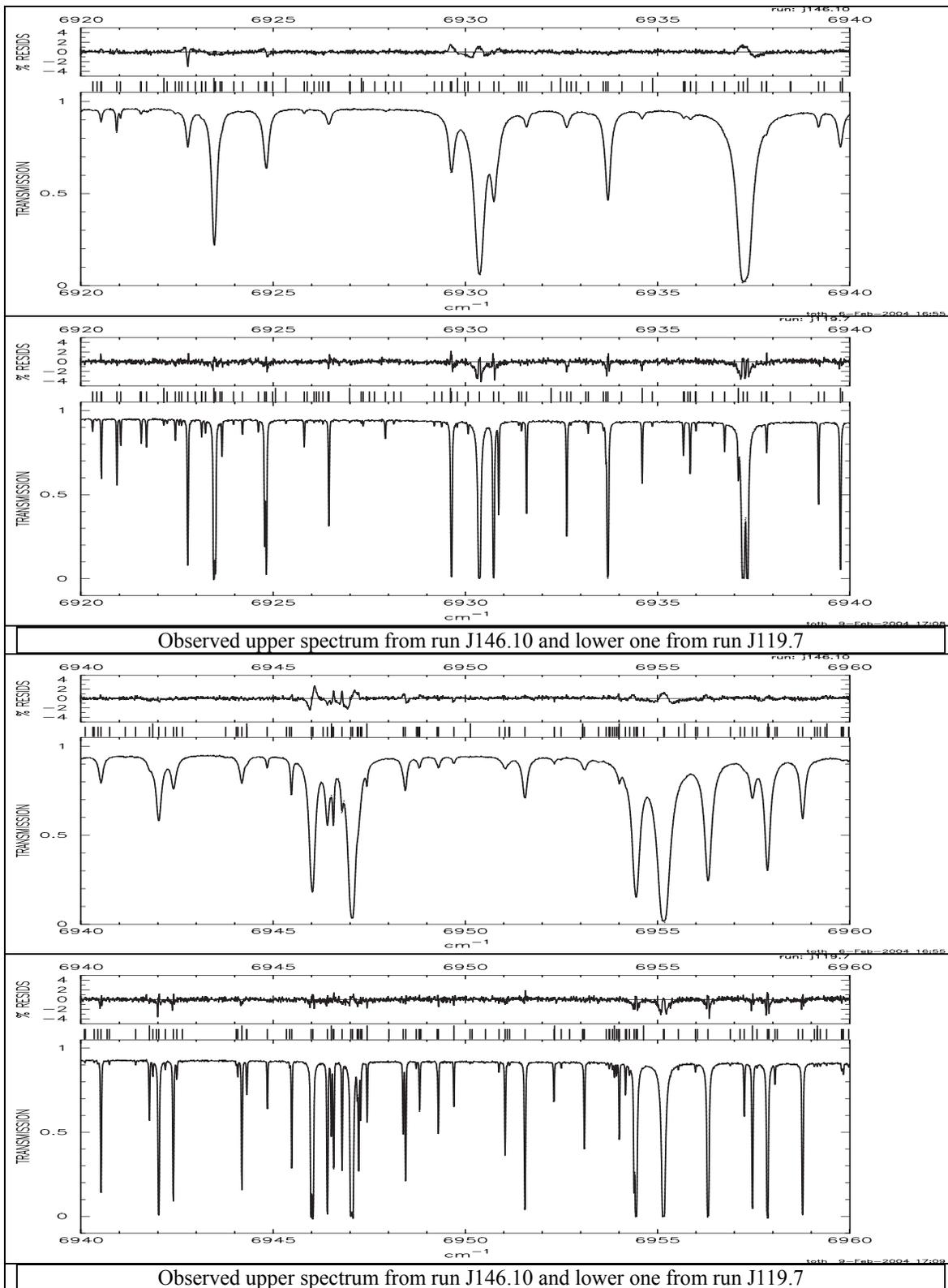
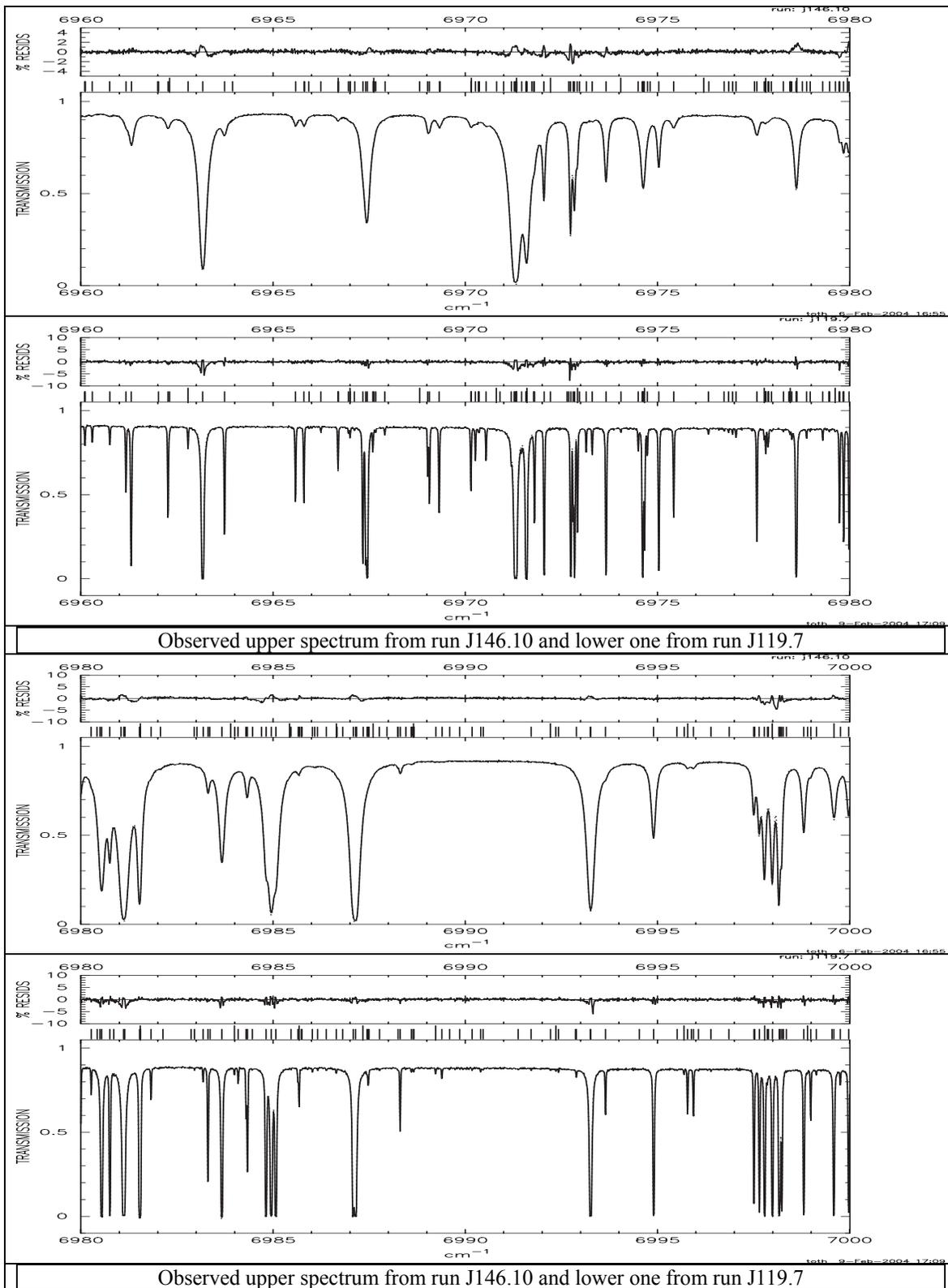
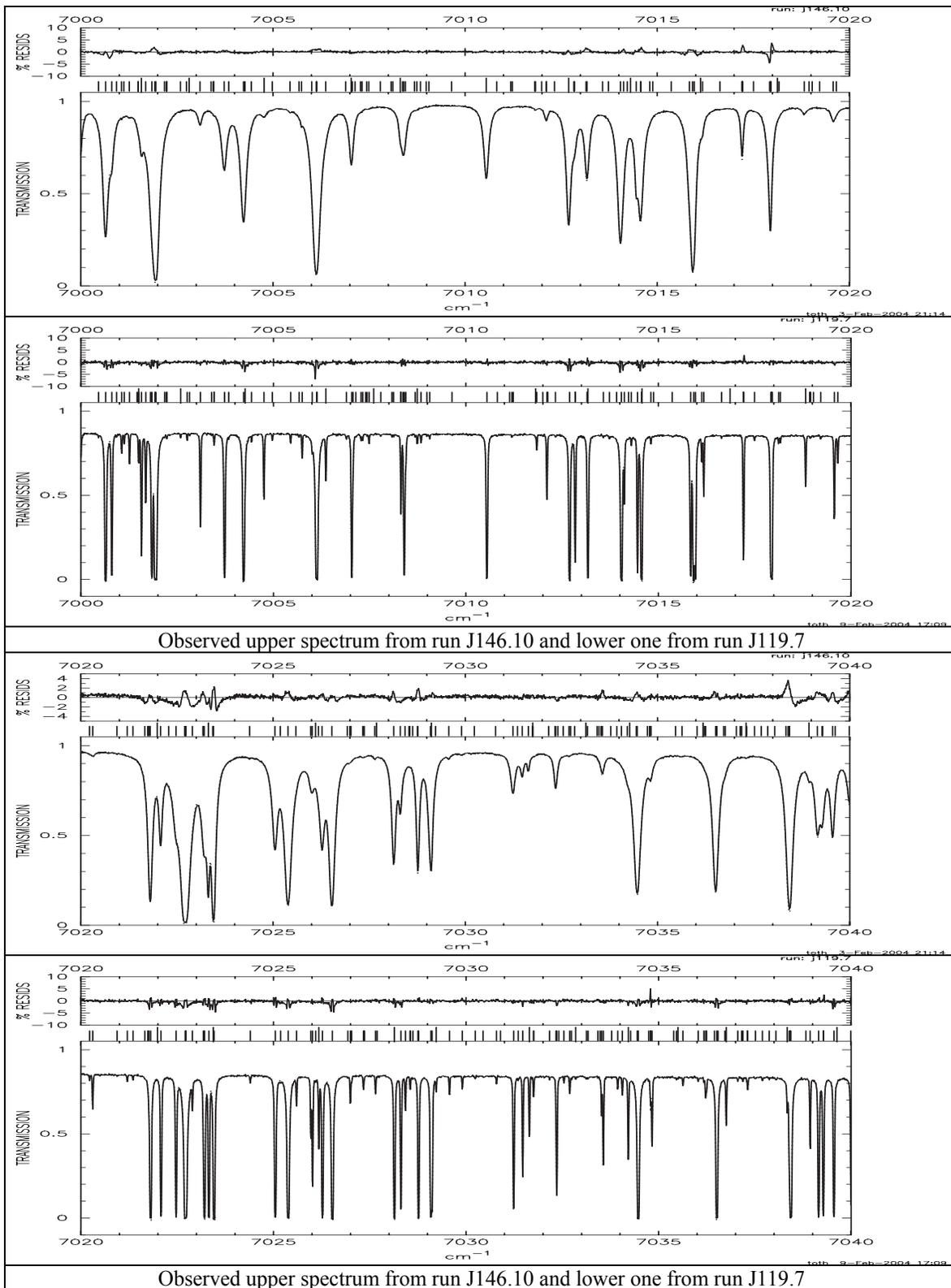


Figure B45. Observed and computed spectra of H₂O



Observed upper spectrum from run J146.10 and lower one from run J119.7

Figure B46. Observed and computed spectra of H₂O



Observed upper spectrum from run J146.10 and lower one from run J119.7

Observed upper spectrum from run J146.10 and lower one from run J119.7

Figure B47. Observed and computed spectra of H₂O

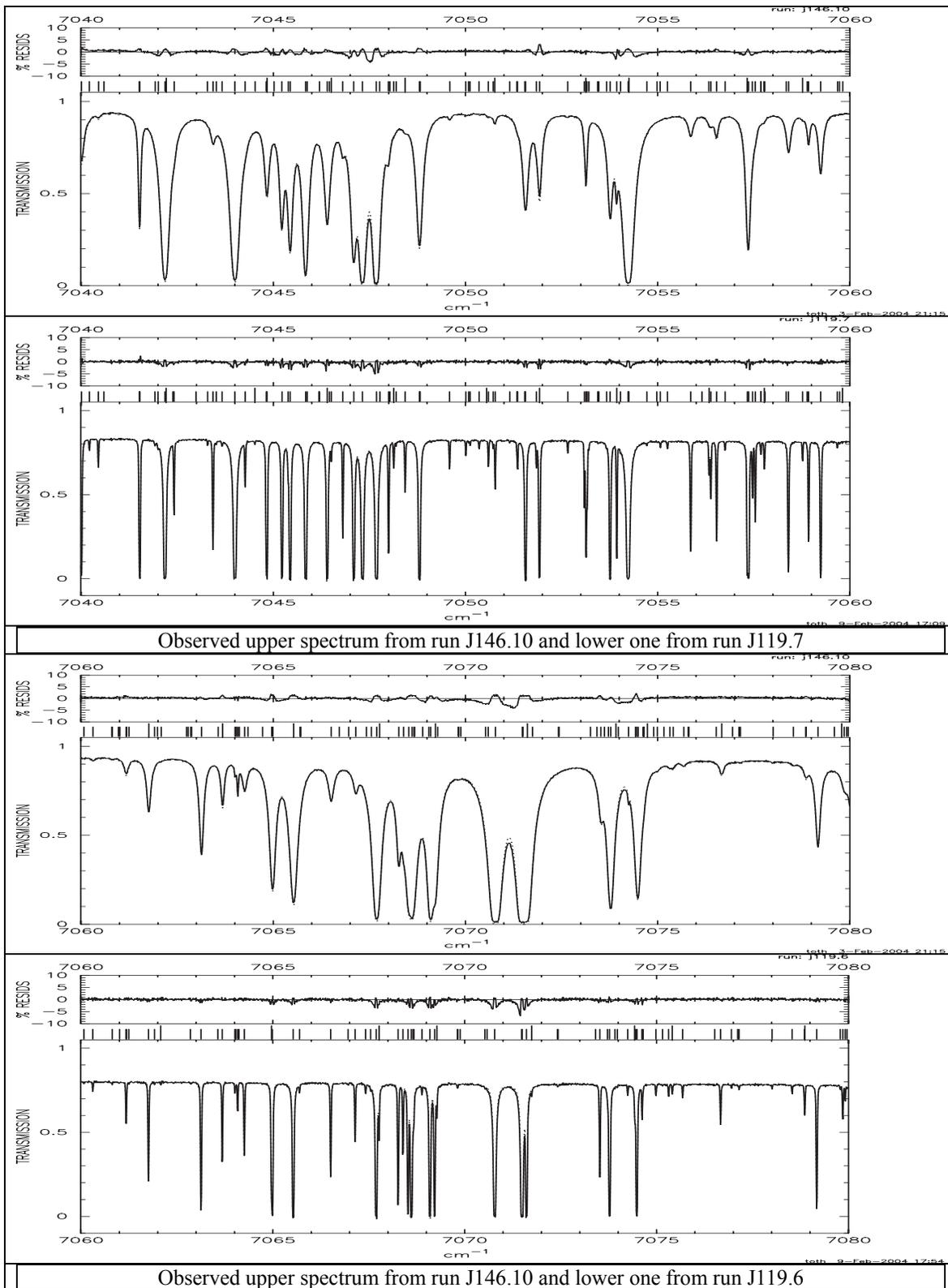


Figure B48. Observed and computed spectra of H₂O

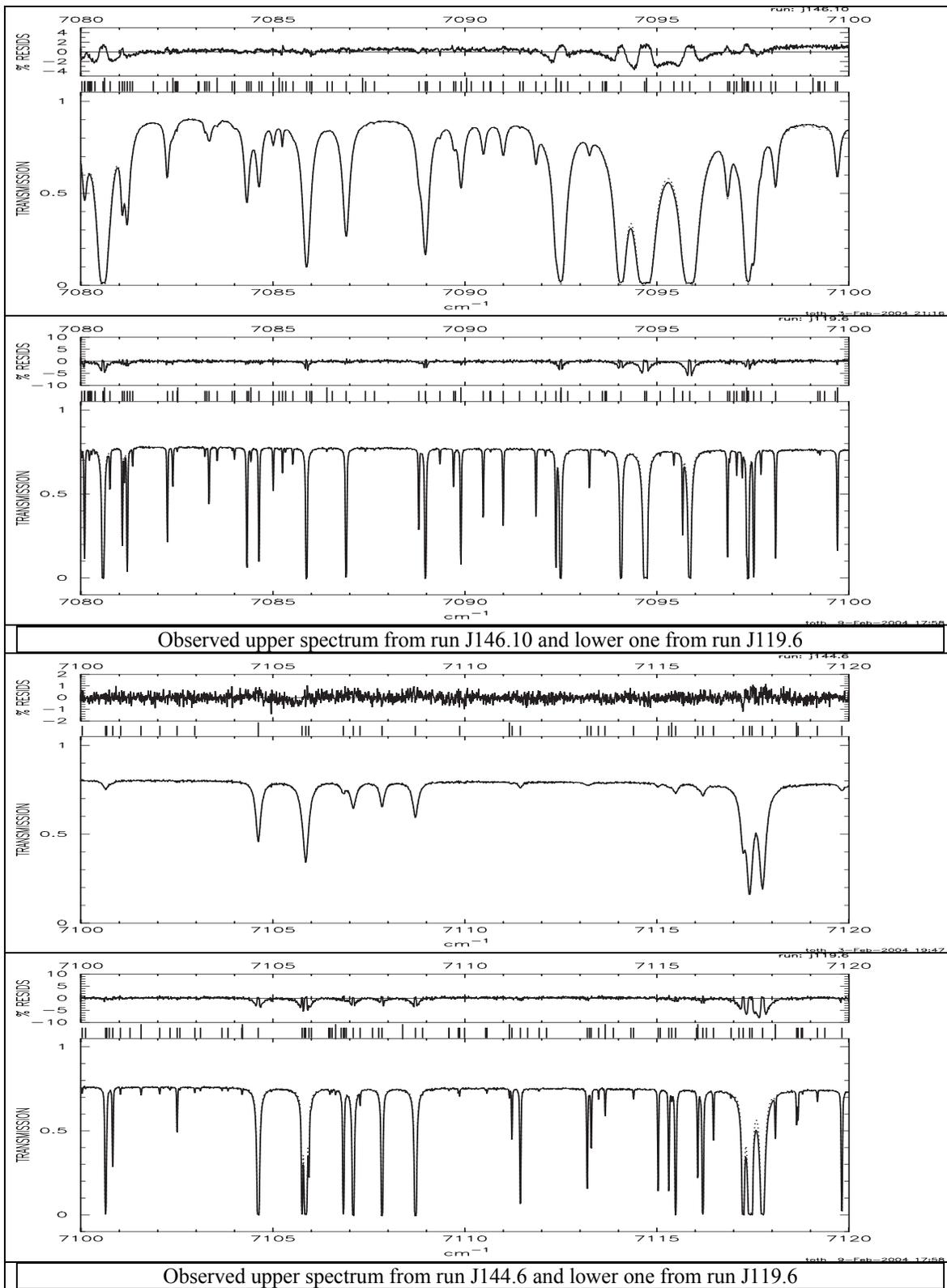


Figure B49. Observed and computed spectra of H₂O

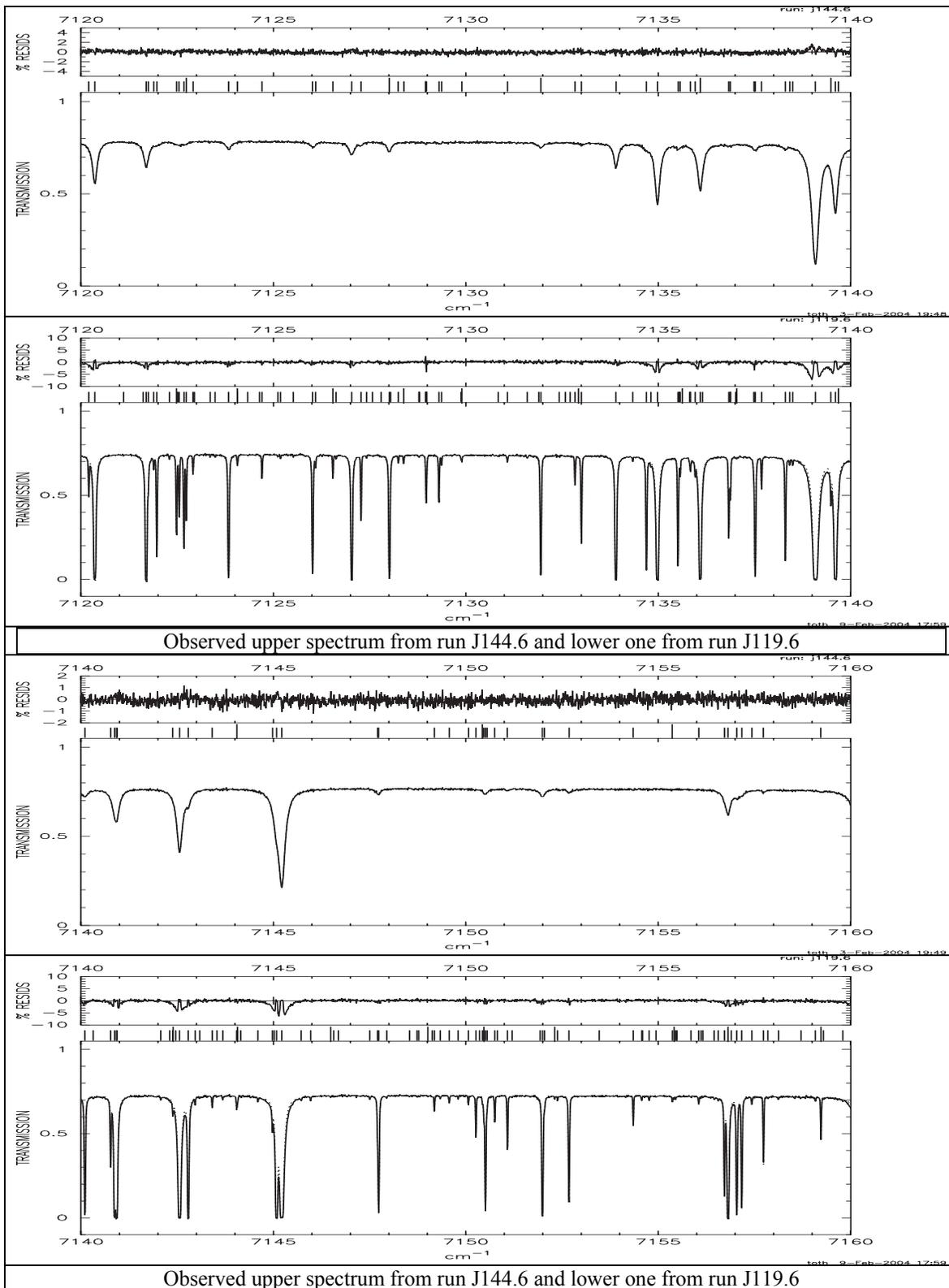


Figure B50. Observed and computed spectra of H₂O

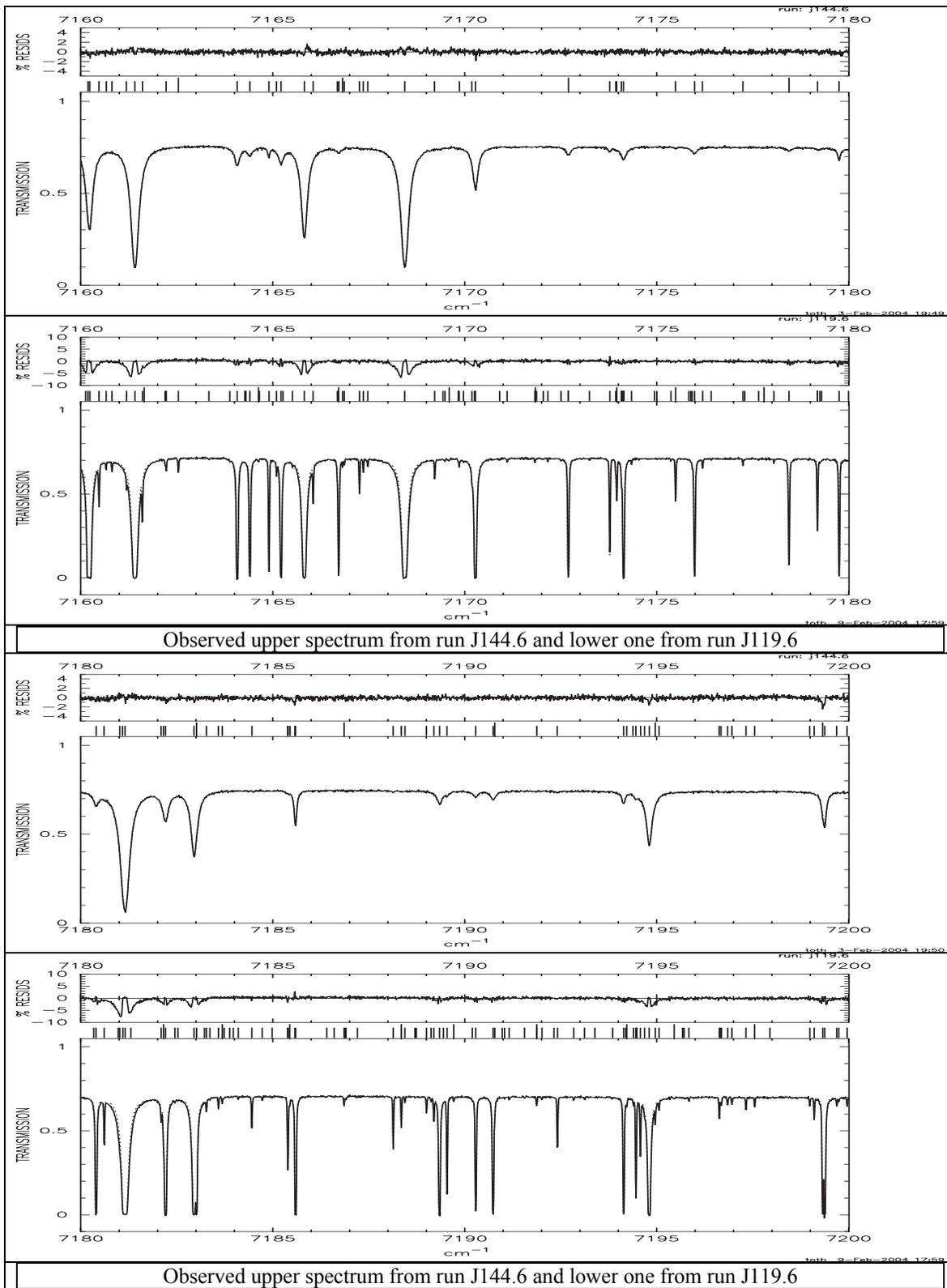


Figure B51. Observed and computed spectra of H₂O

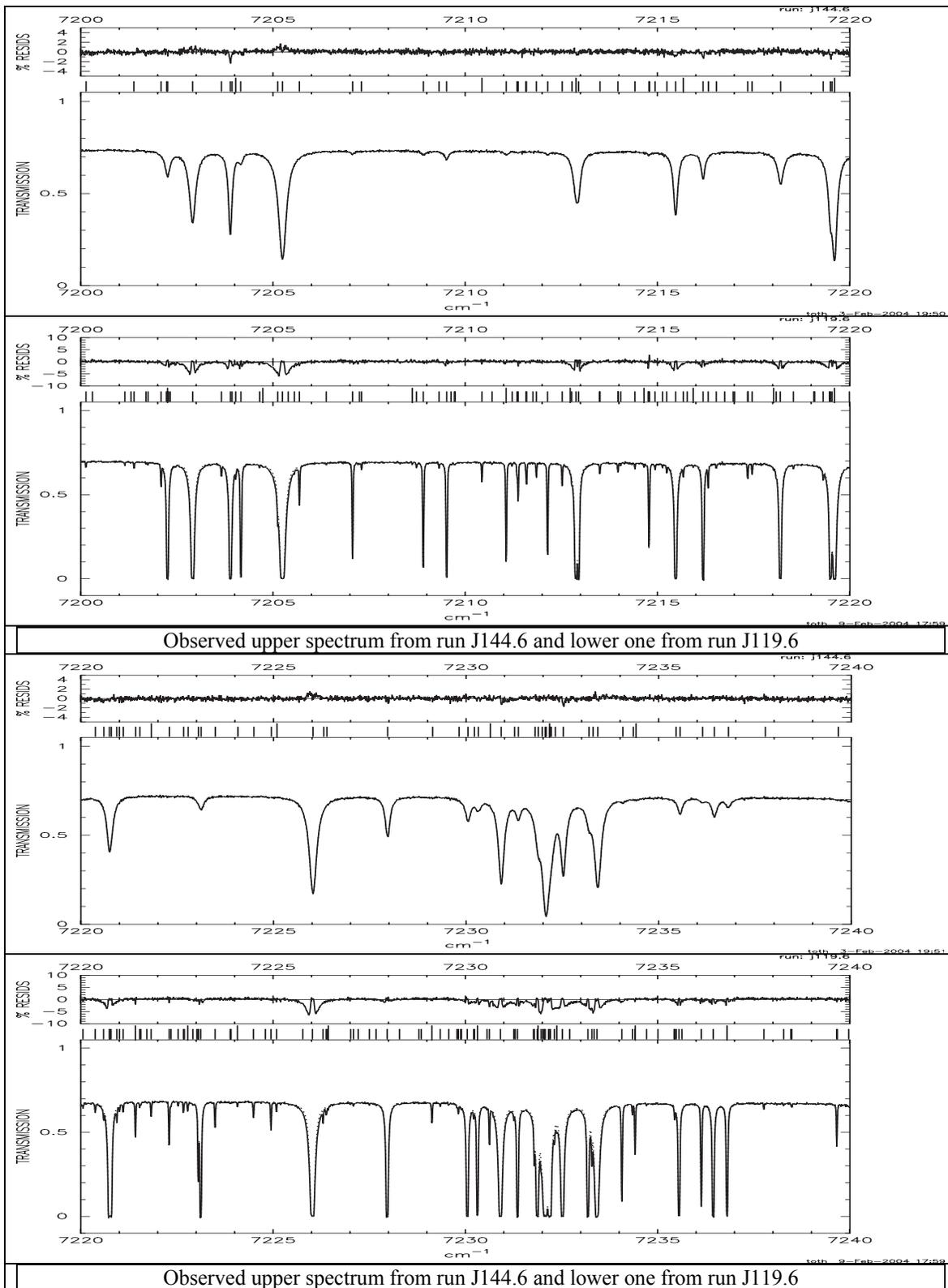


Figure B52. Observed and computed spectra of H₂O

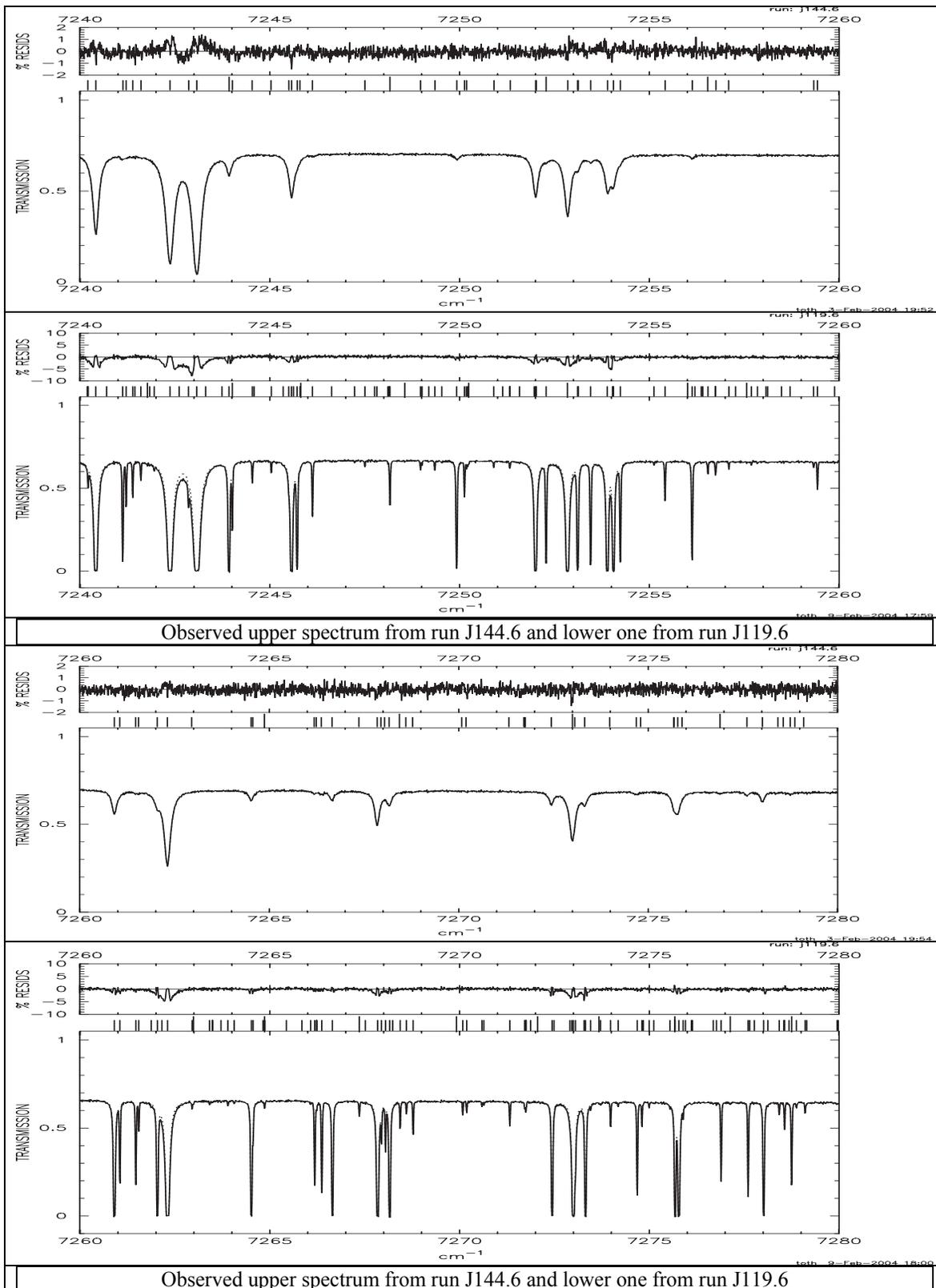


Figure B53. Observed and computed spectra of H₂O

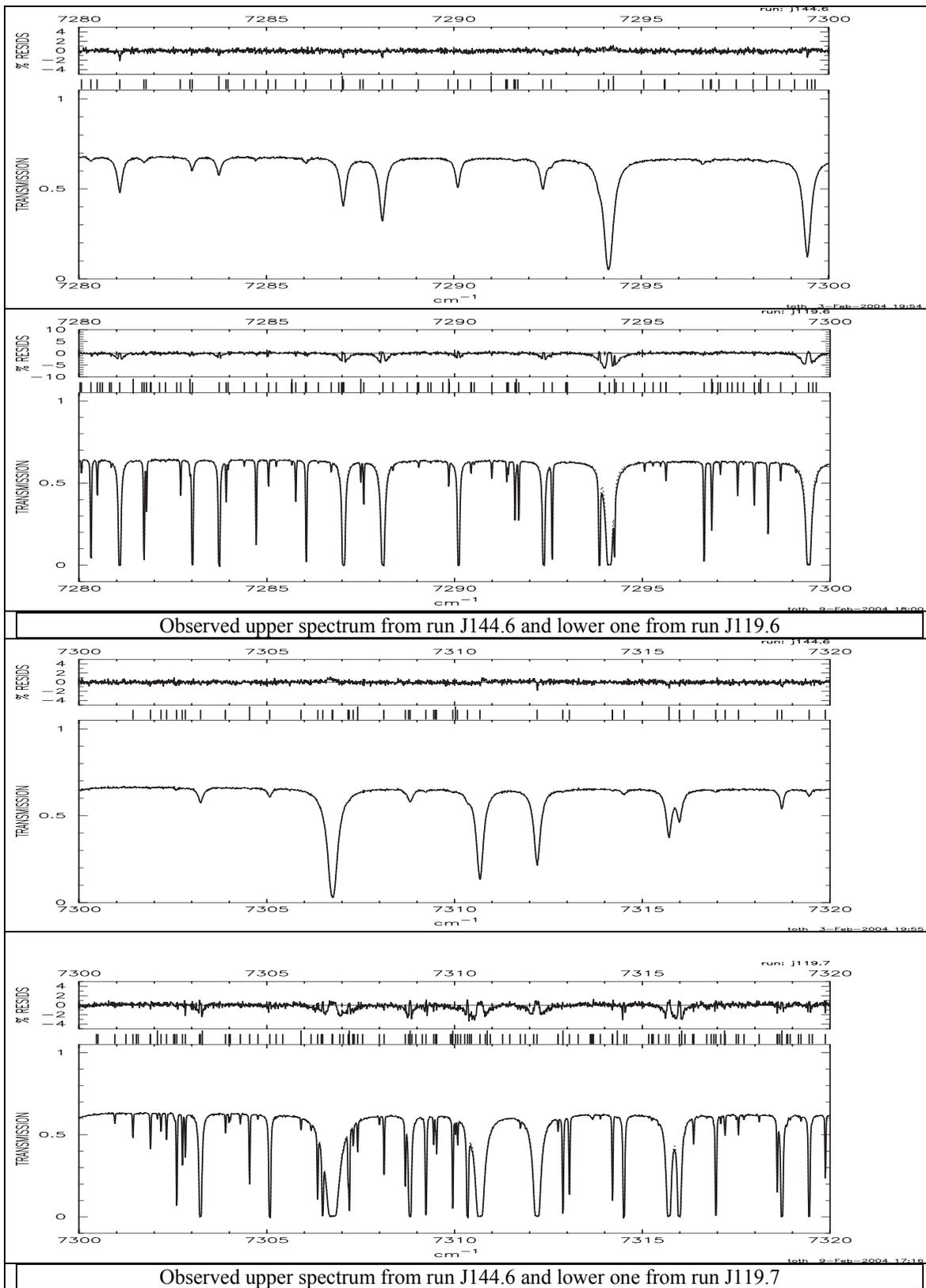


Figure B54. Observed and computed spectra of H₂O

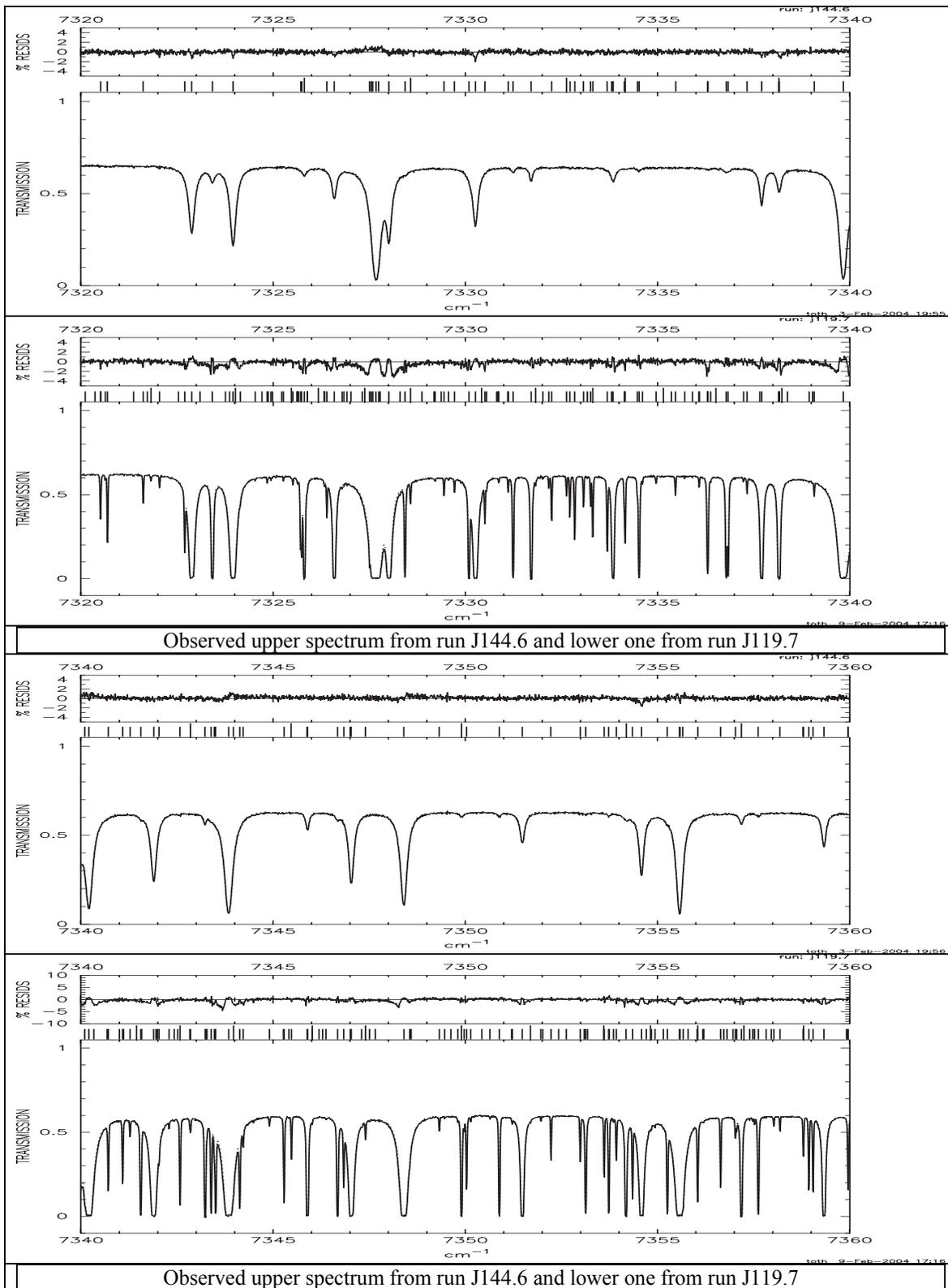


Figure B55. Observed and computed spectra of H₂O

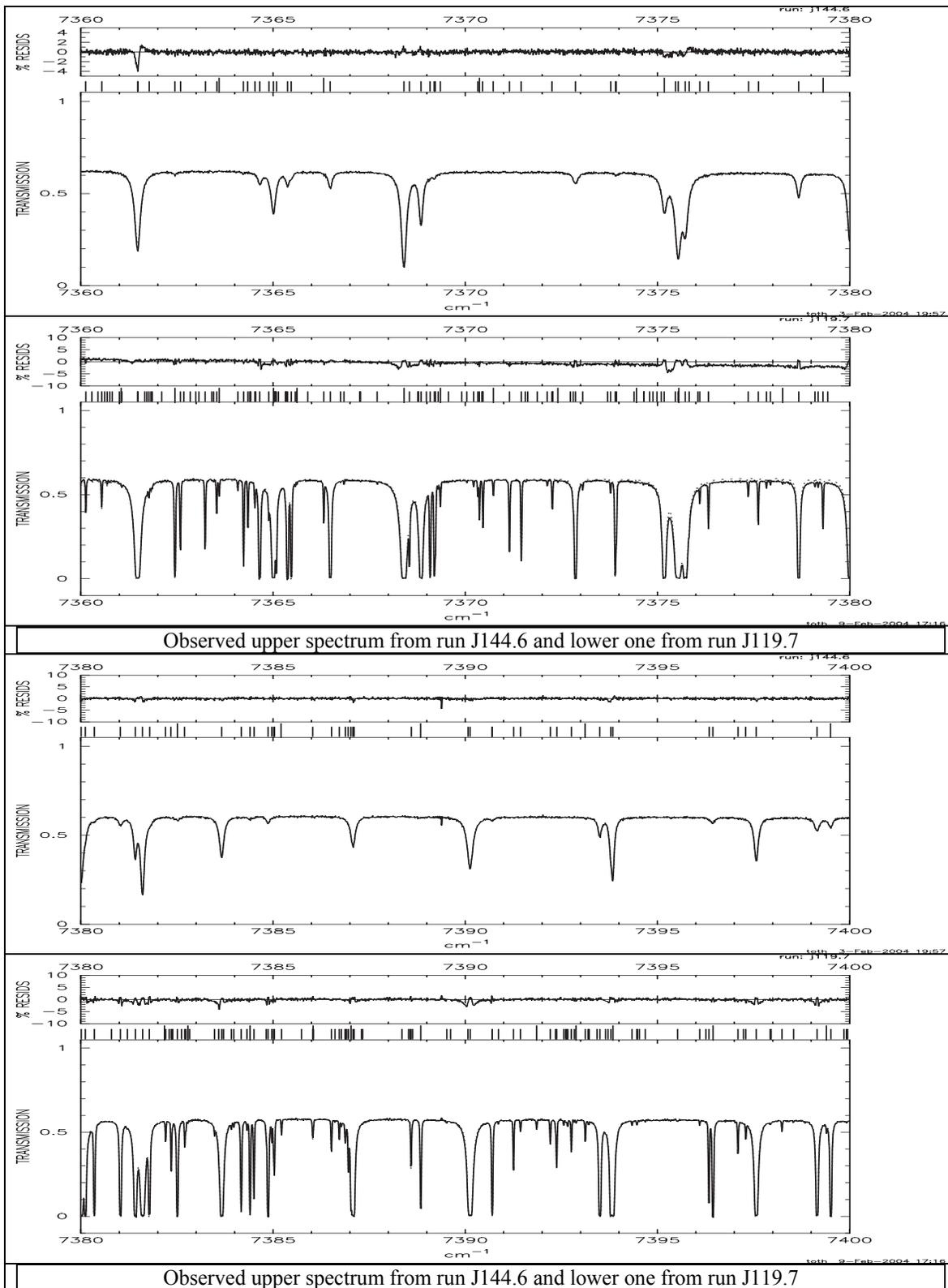


Figure B56. Observed and computed spectra of H₂O

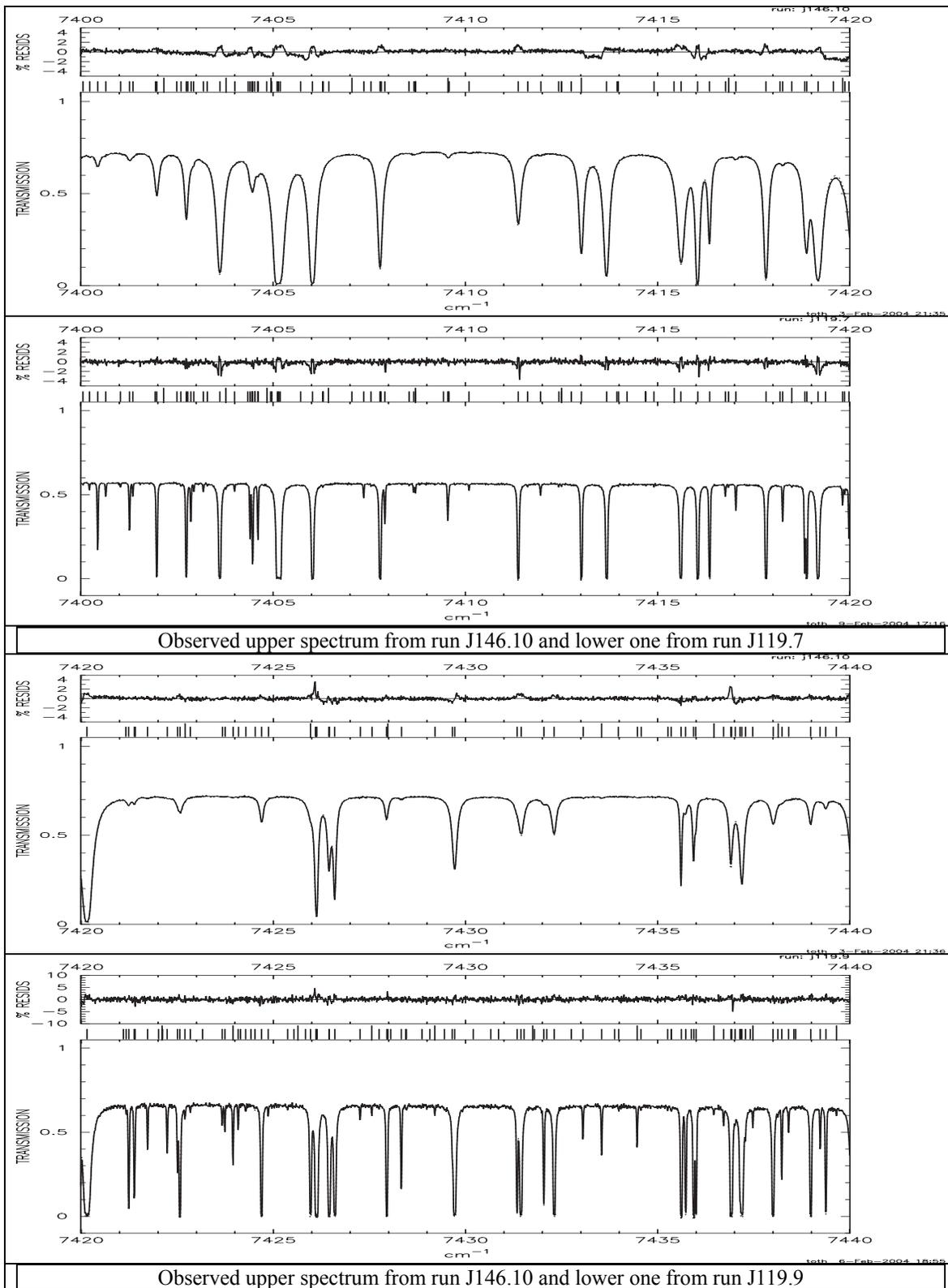


Figure B57. Observed and computed spectra of H₂O

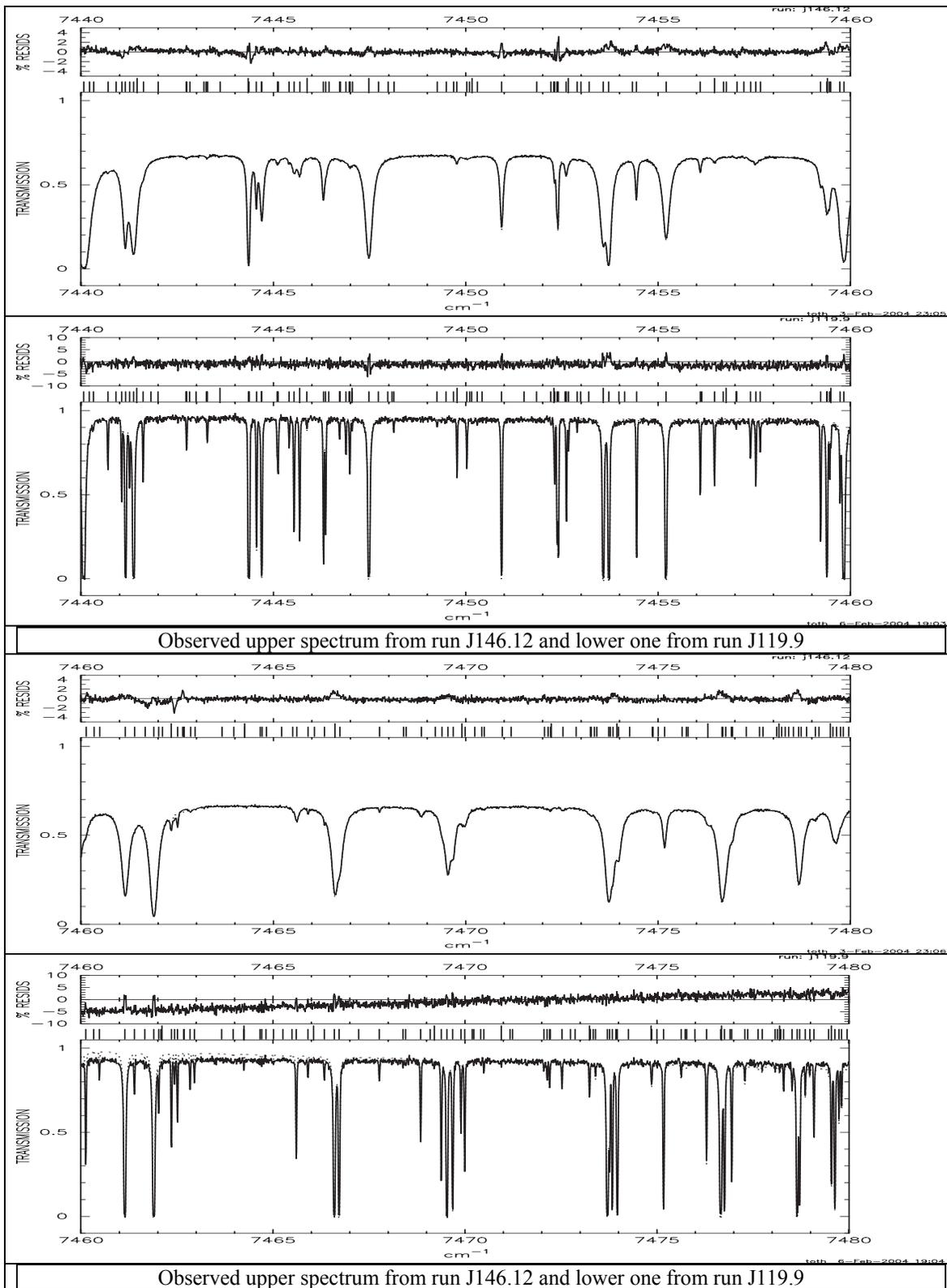
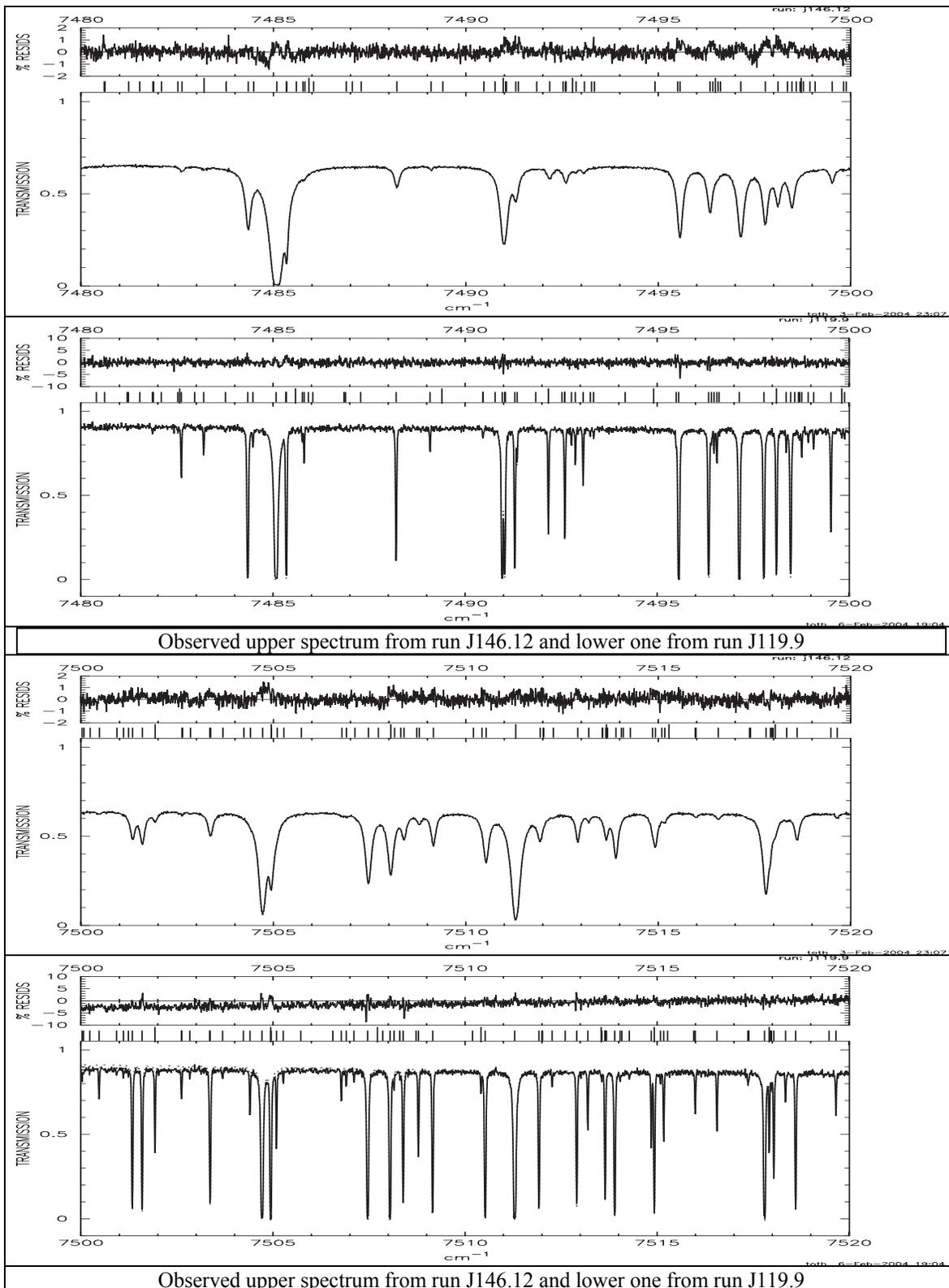


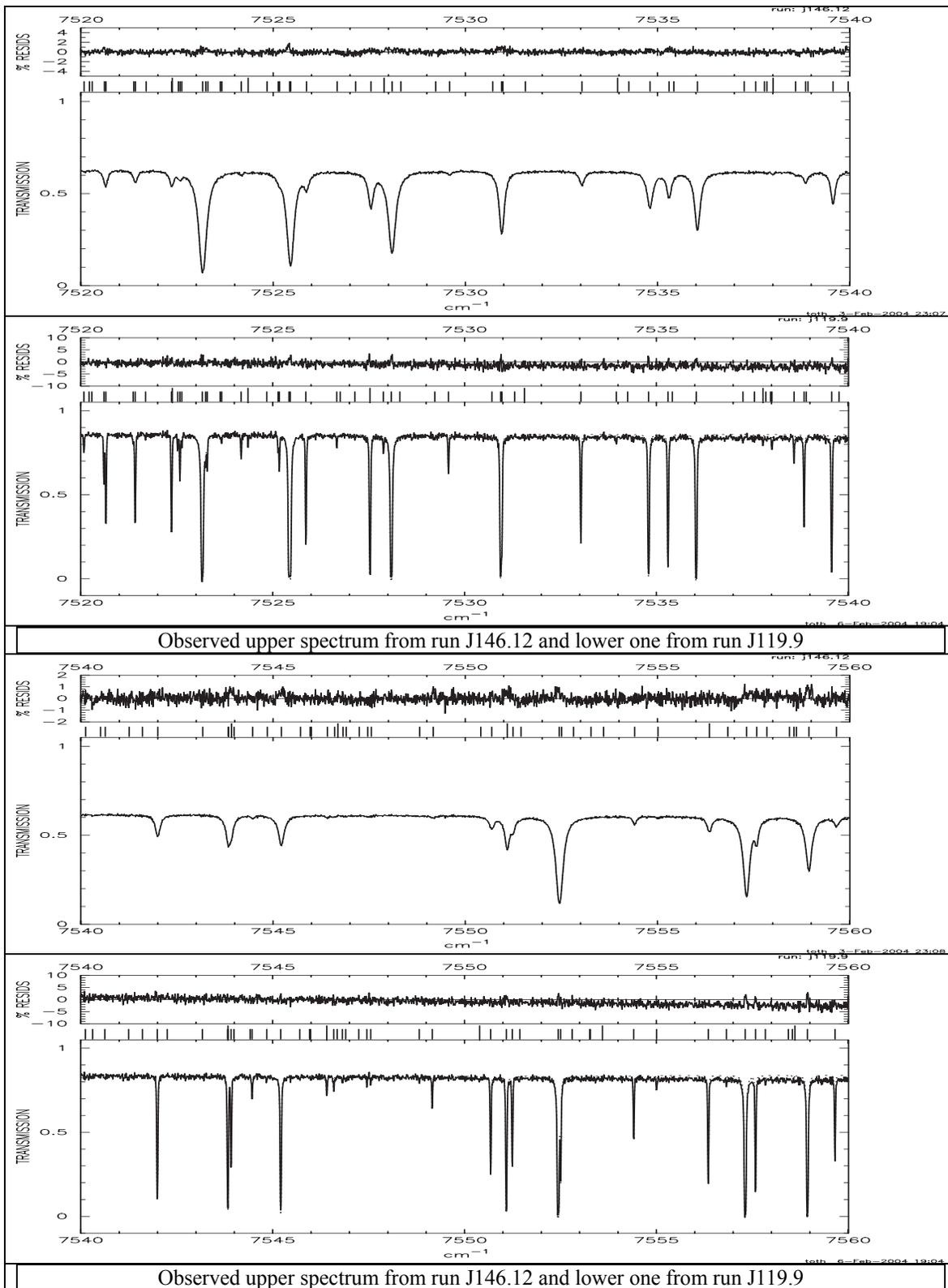
Figure B58. Observed and computed spectra of H₂O



Observed upper spectrum from run J146.12 and lower one from run J119.9

Observed upper spectrum from run J146.12 and lower one from run J119.9

Figure B59. Observed and computed spectra H₂O



Observed upper spectrum from run J146.12 and lower one from run J119.9

Observed upper spectrum from run J146.12 and lower one from run J119.9

Figure B60. Observed and computed spectra of H₂O

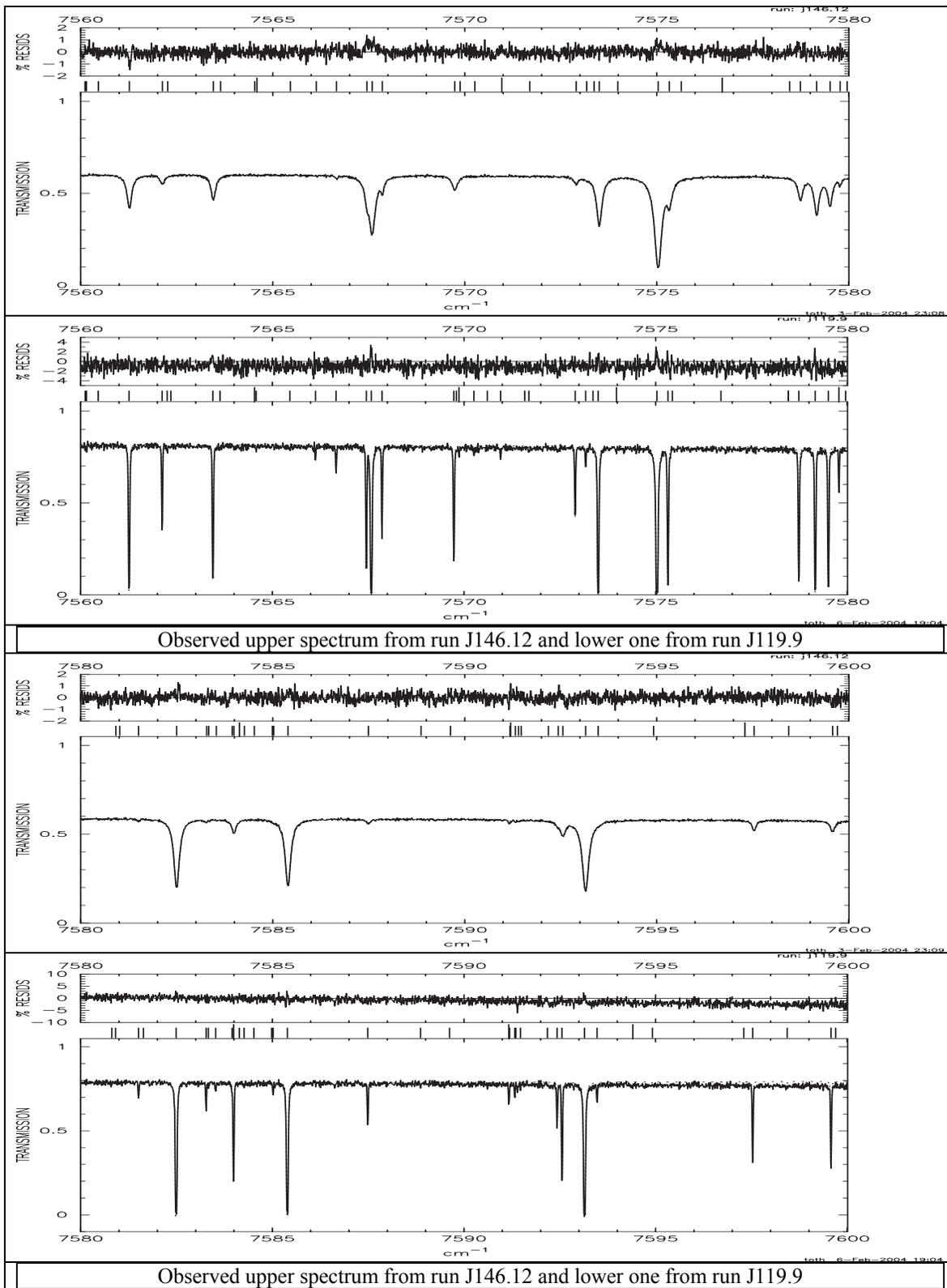


Figure B61. Observed and computed spectra of H₂O

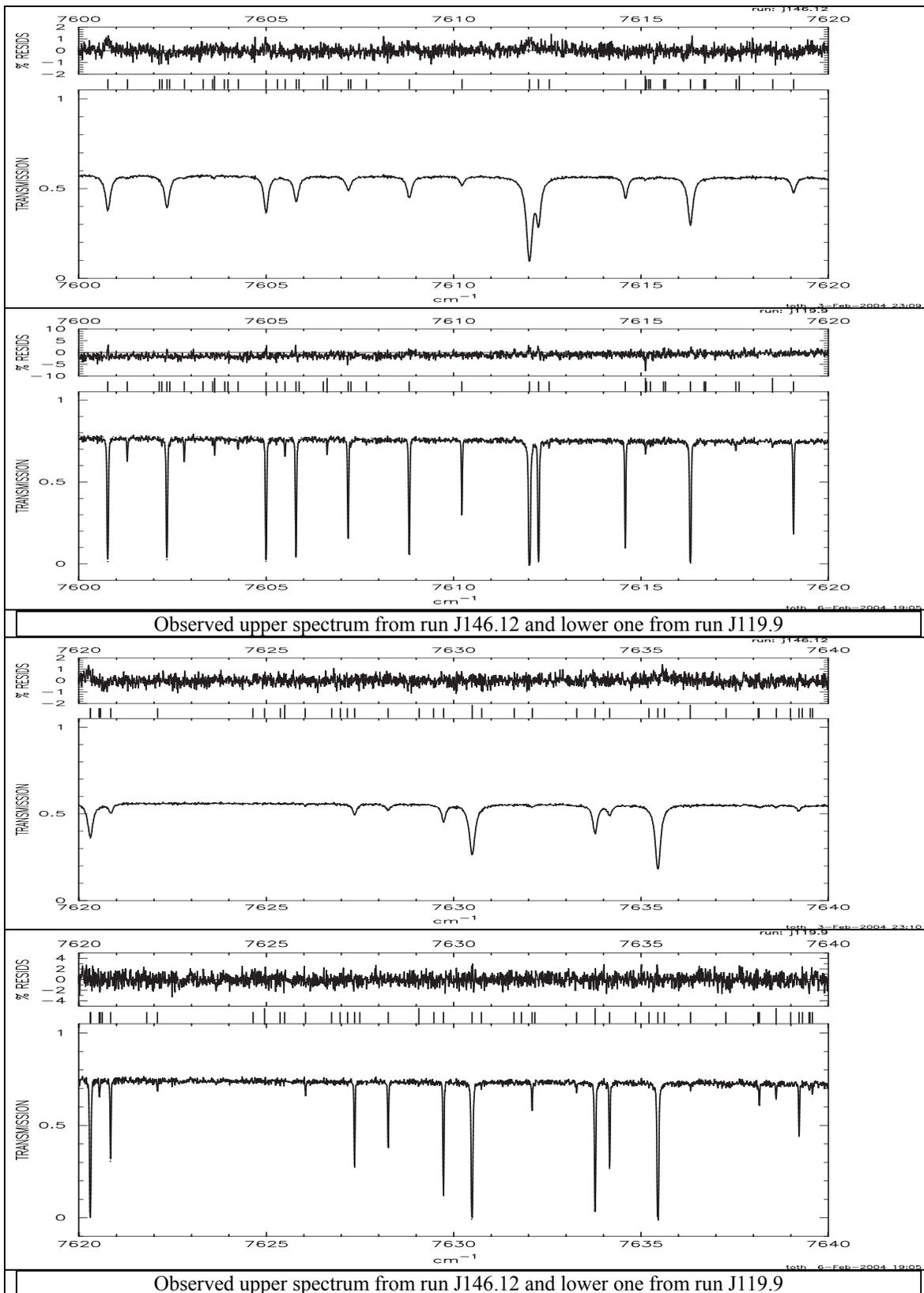


Figure B62. Observed and computed spectra of H₂O

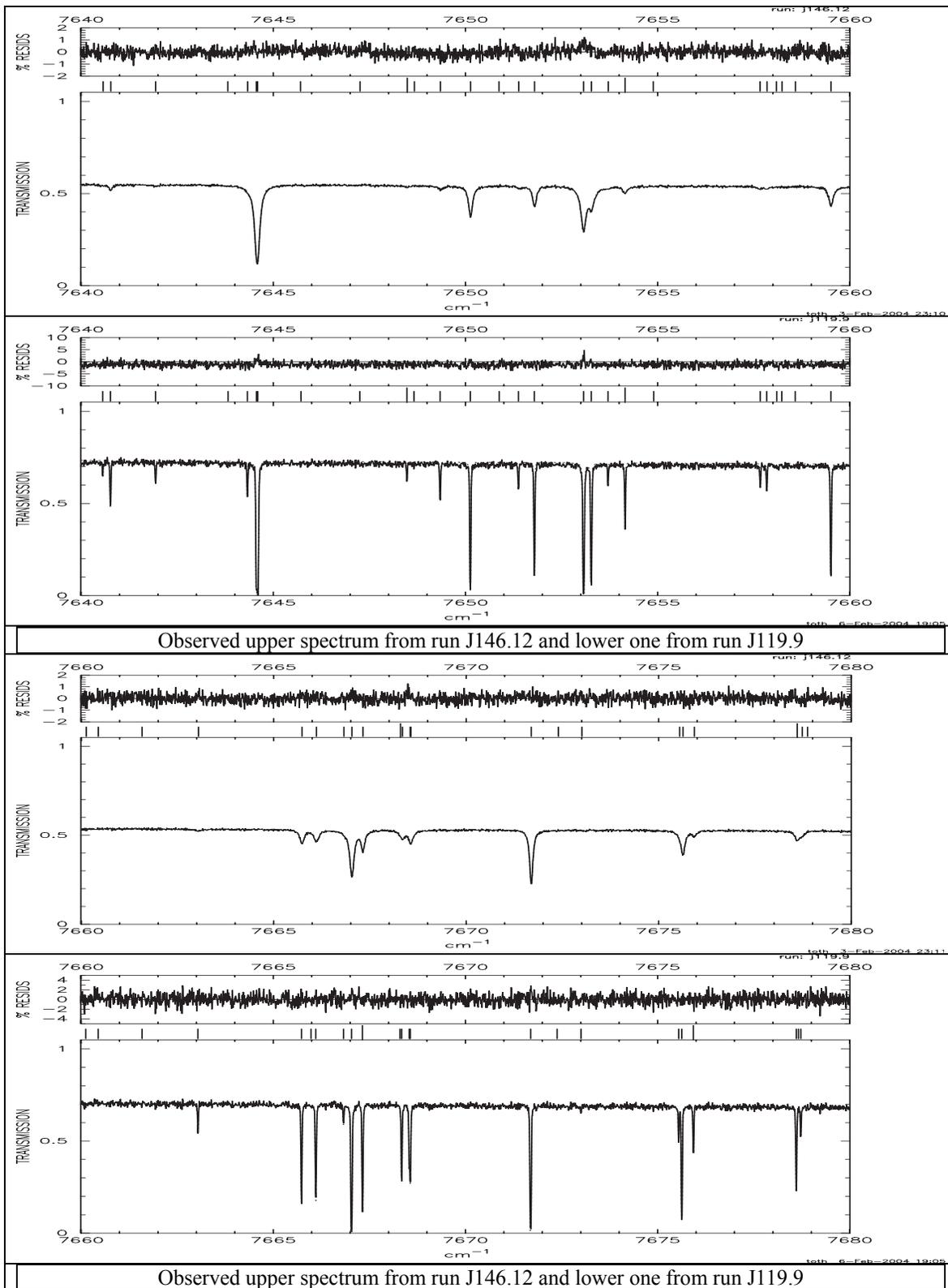


Figure B63. Observed and computed spectra of H₂O

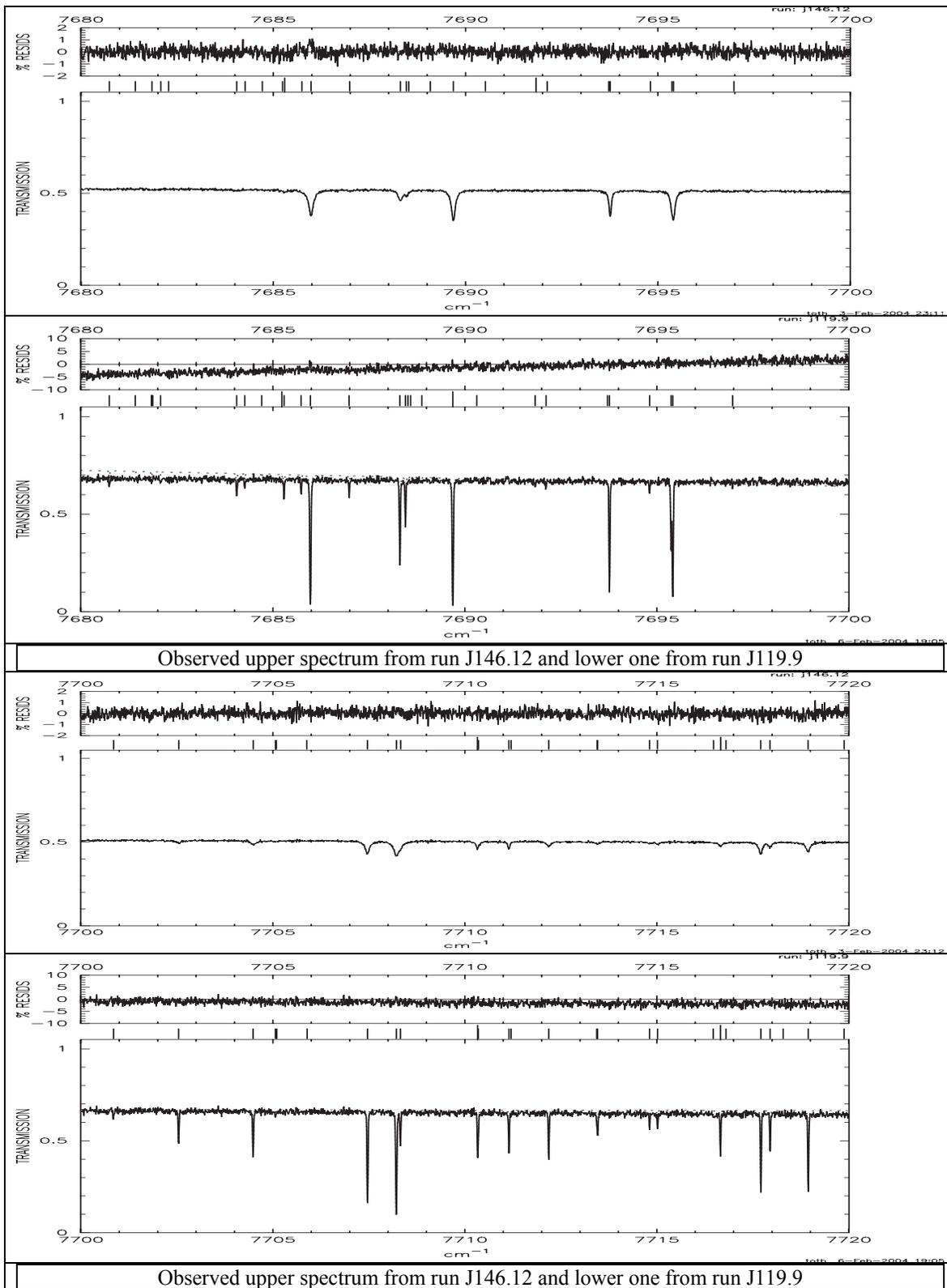


Figure B64. Observed and computed spectra of H₂O

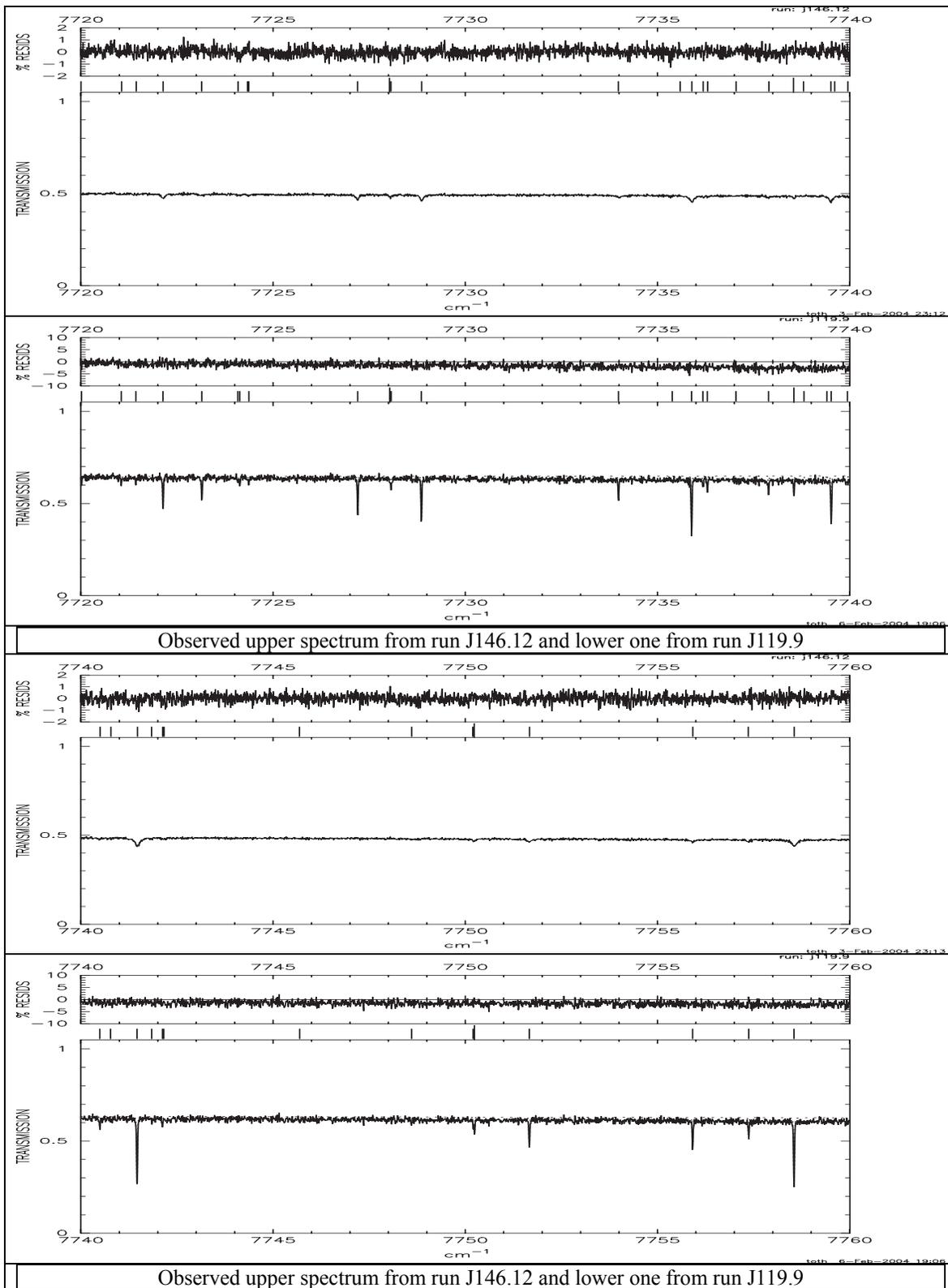


Figure B65. Observed and computed spectra of H₂O

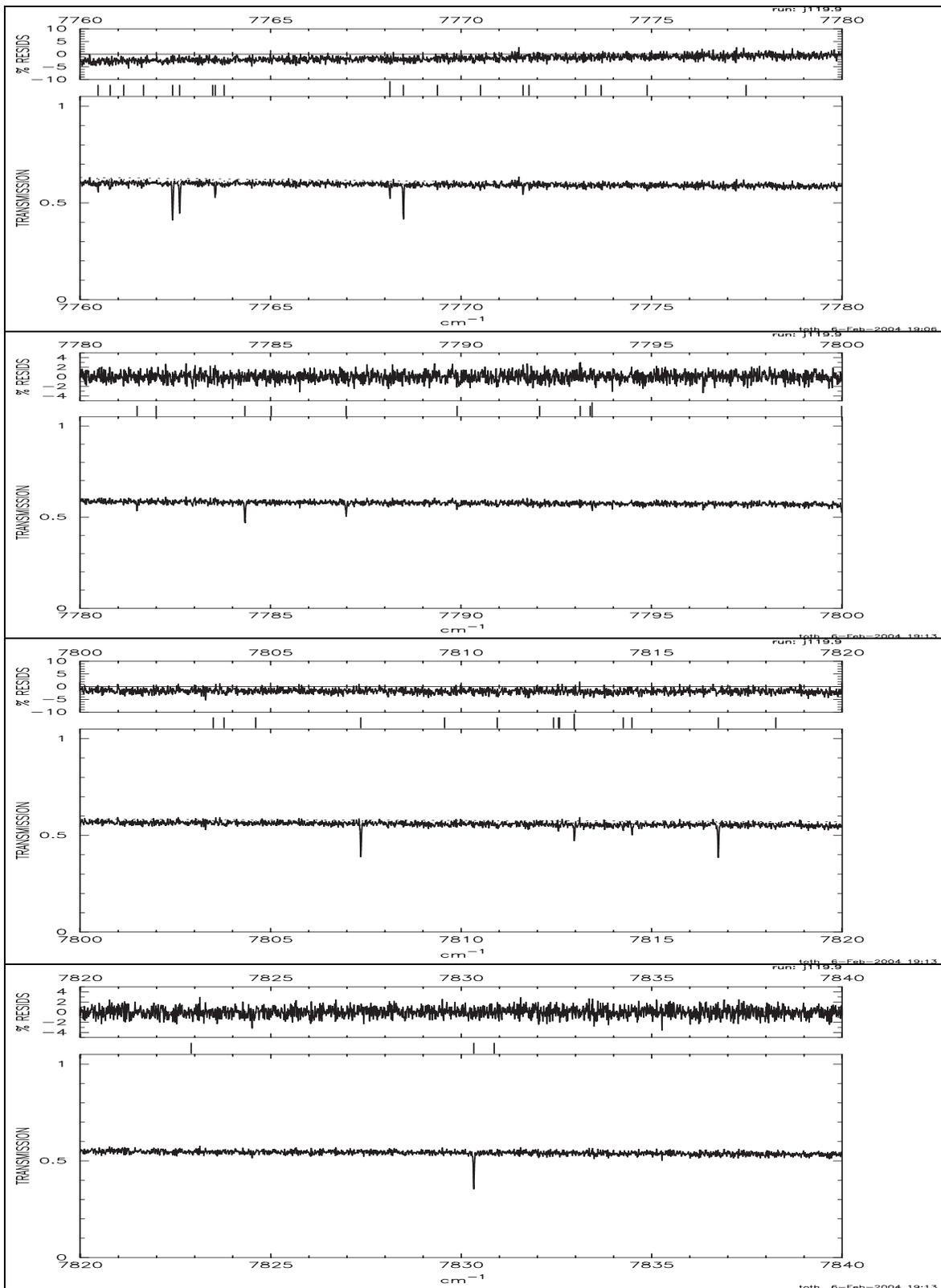


Figure B66. Observed and computed spectra of H₂O. Observed spectra from run J119.9