

## Appendix G

The figures given in this section presents spectra of N<sub>2</sub>O at low sample pressures. The spectra cover the region from 1900 to 6800 cm<sup>-1</sup>. 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 (FTS) 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 N<sub>2</sub>O computed spectra were derived from the spectral parameters given in the compilation, Sisam.N2O. In some spectral regions, the observed spectra contain absorptions of CO<sub>2</sub> and H<sub>2</sub>O due to room air located in the optical path between the absorption cell and the entrance to the FTS. The H<sub>2</sub>O features were included in the computed spectra using the parameters given in SISAM.H2O.

Run	spectral resolutions (cm <sup>-1</sup> )	N <sub>2</sub> O Pressure (Torr)	Path (m)
J29.2.7	0.011	0.114	1.5
J29,1,8	0.011	0.90	1.5
J56,1.1	0.011	1.00	25
J56.1.2	0.011	1.00	97
J56,1,5	0.011	1.00	97

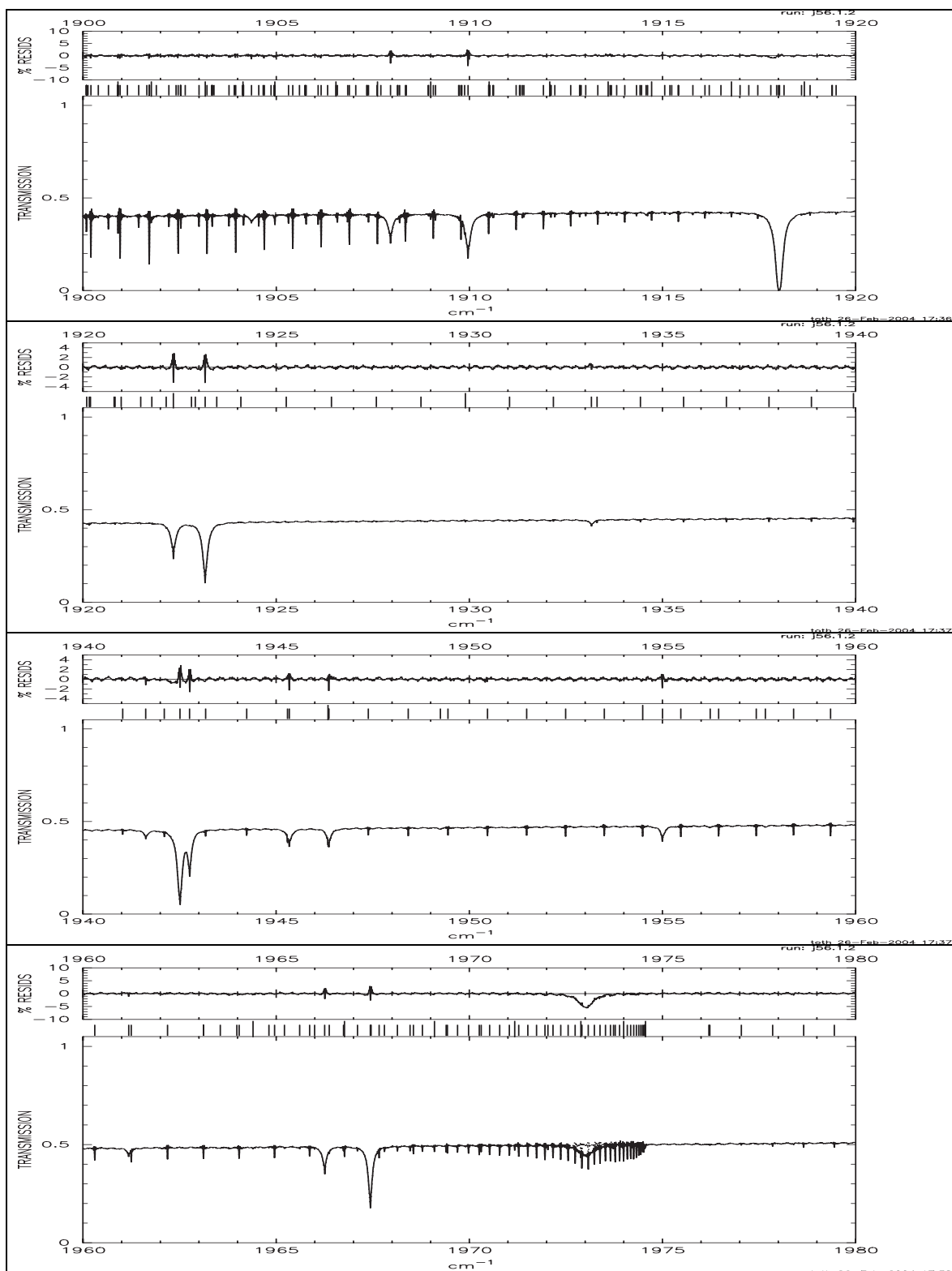


Figure G1. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.2. Air-broadened H<sub>2</sub>O absorptions are observed and computed and instrument/filter effect located at about 1733 cm<sup>-1</sup>.

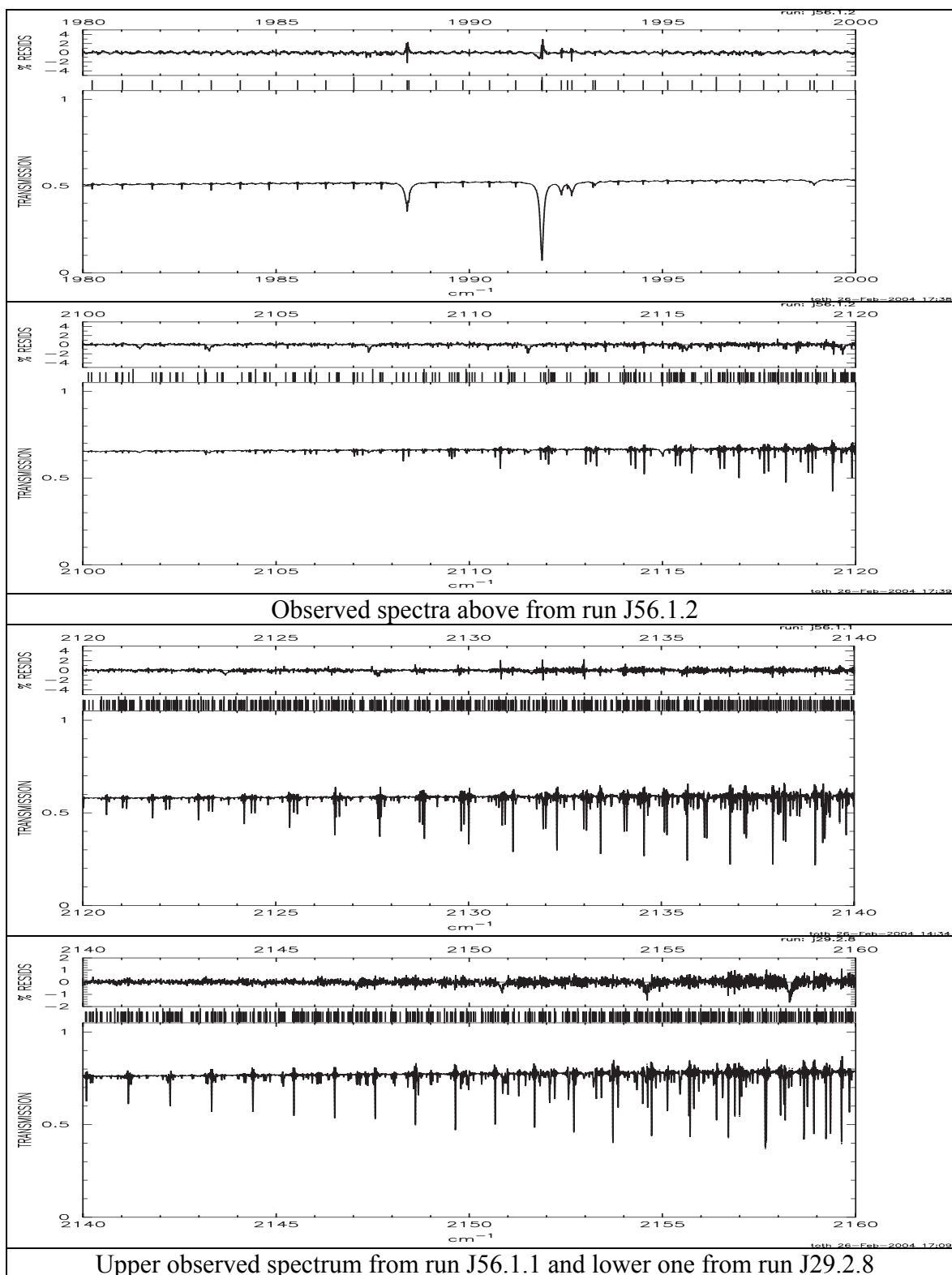


Figure G2. Observed and computed spectra of  $\text{N}_2\text{O}$ . Air-broadened  $\text{H}_2\text{O}$  absorptions are observed and computed. Also observed, but not computed, in the bottom spectrum are slight CO absorptions due to laboratory room air.

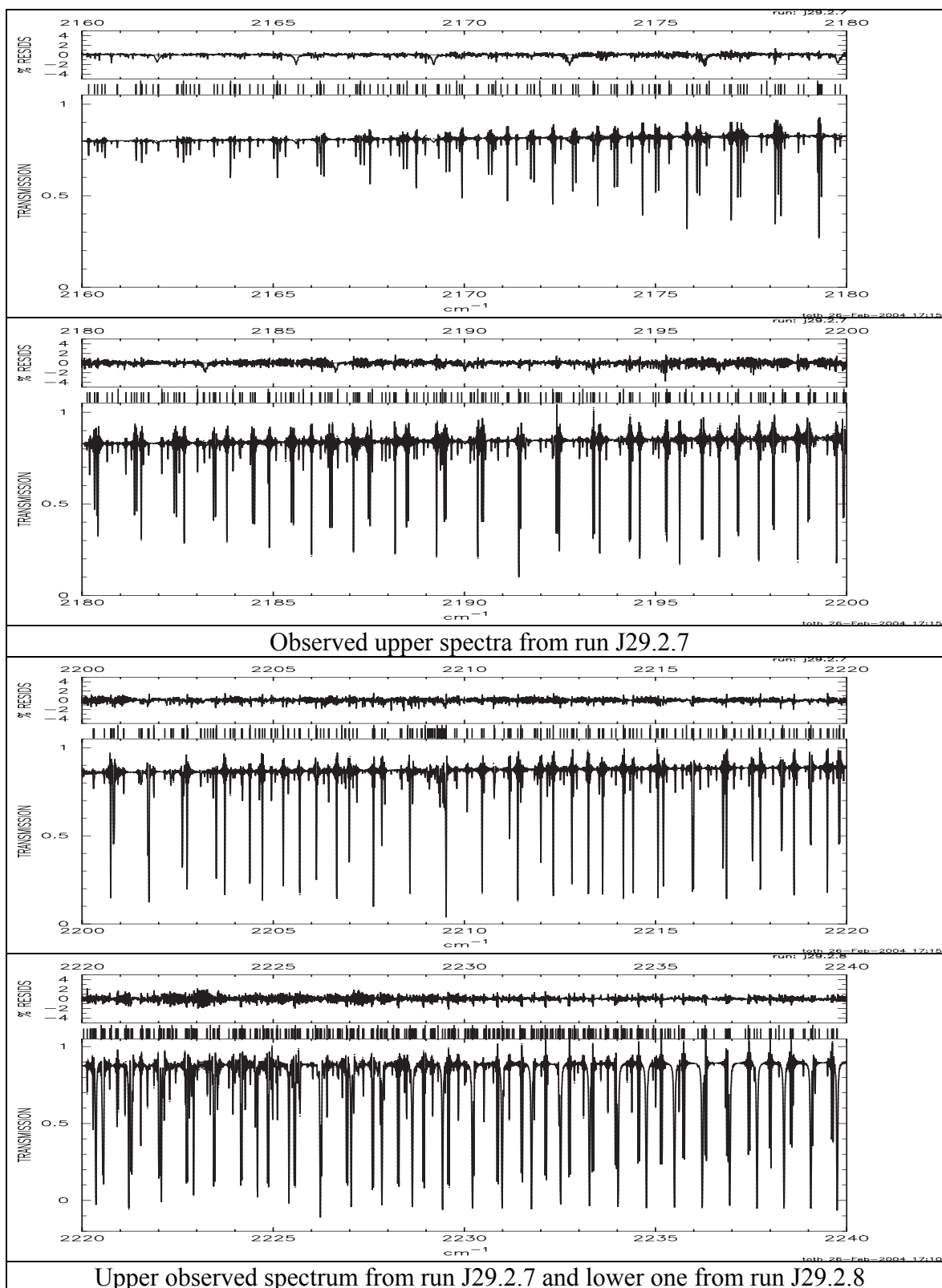


Figure G3. Observed and computed spectra of  $N_2O$ . Small CO absorptions due to laboratory room air also observed, but not computed, in the top two spectra.



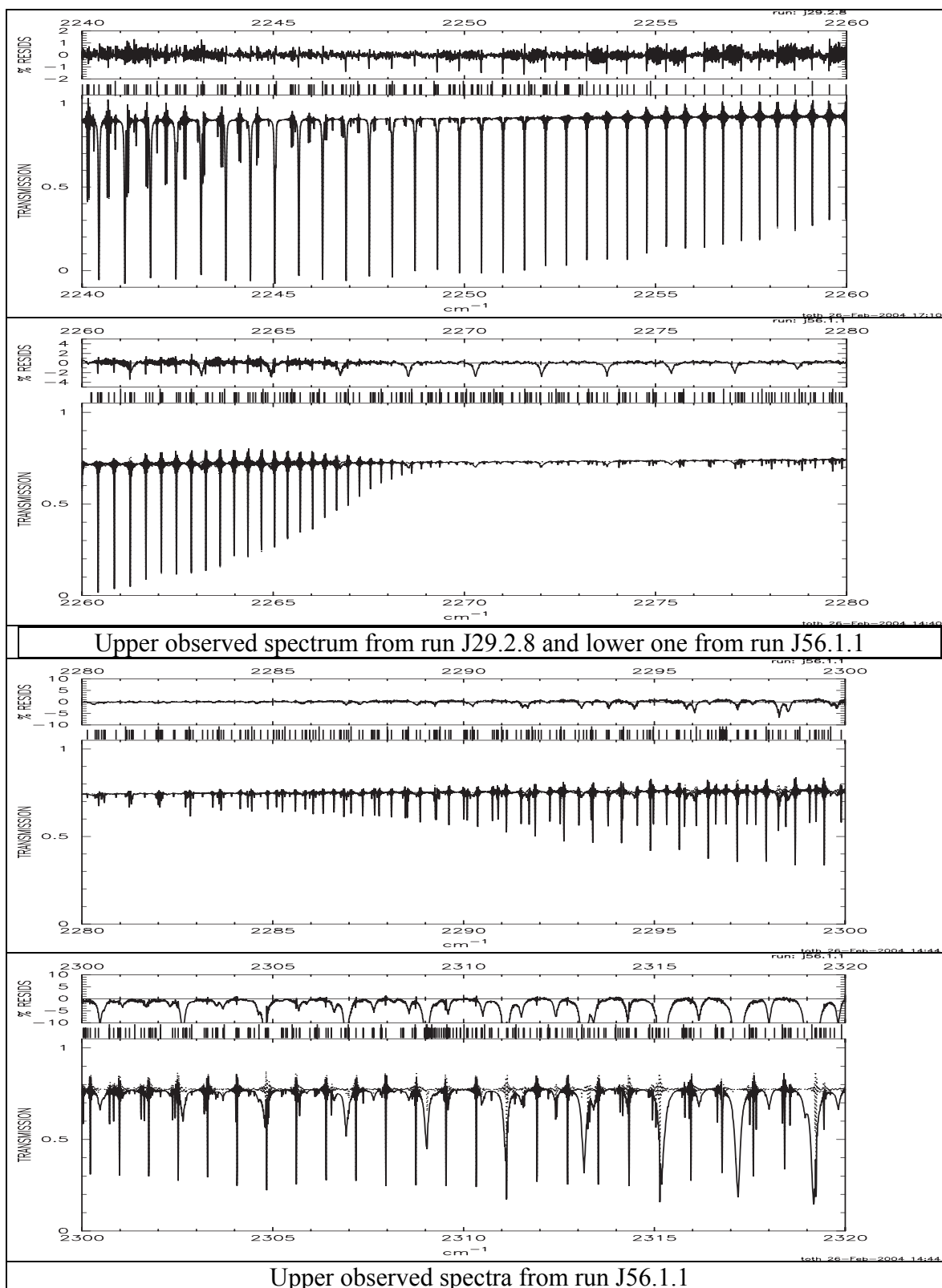


Figure G4. Observed and computed spectra of  $\text{N}_2\text{O}$ . Also observed, but not computed, are  $\text{CO}_2$  absorptions due to laboratory room air.

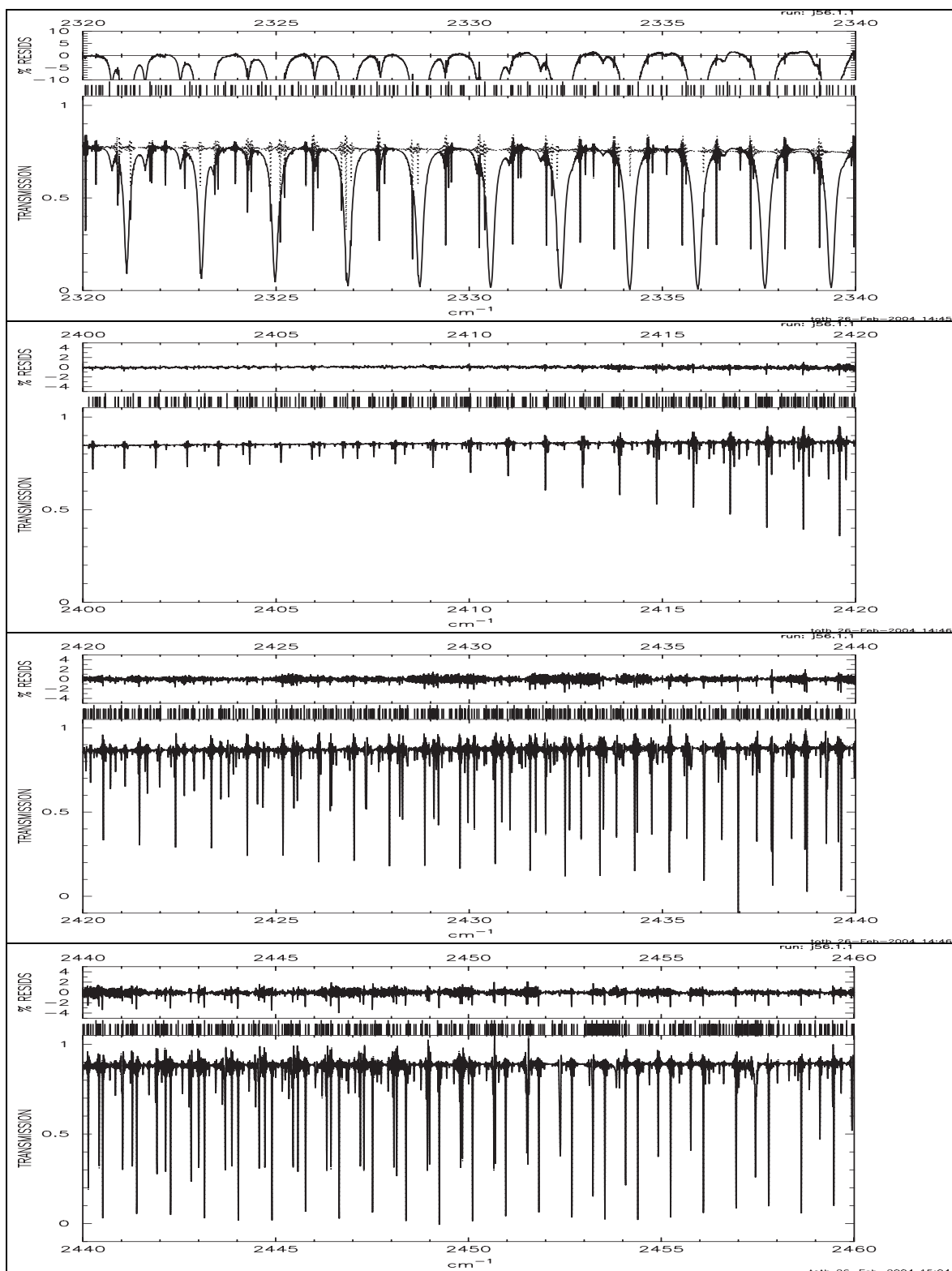


Figure G5. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.1  
CO<sub>2</sub> absorptions due to laboratory room air observed, but not computed in the top  
spectra.

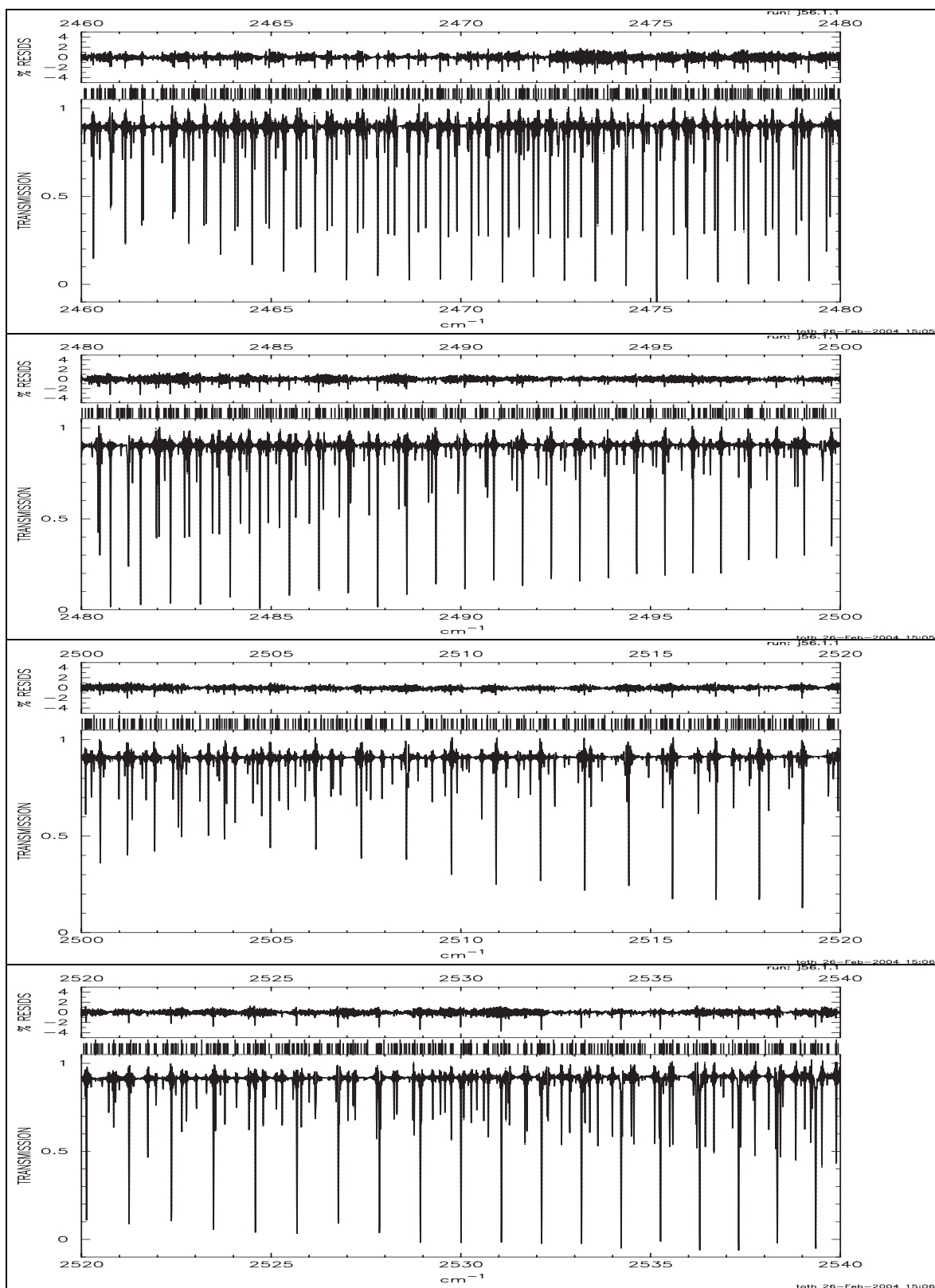


Figure G6. Observed and computed spectra of  $\text{N}_2\text{O}$ . Observed spectra from run J56.1.1

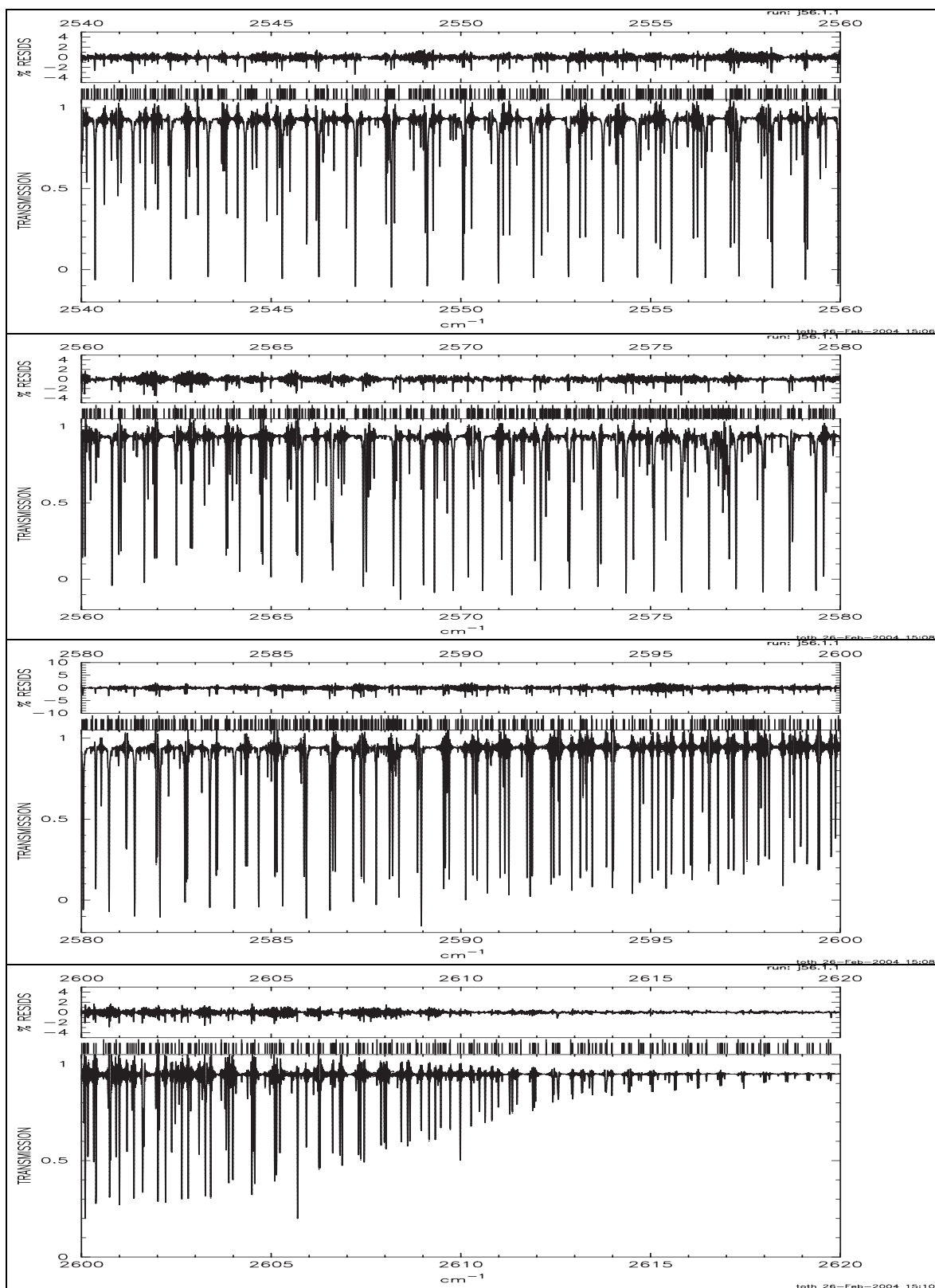


Figure G7. Observed and computed spectra of  $\text{N}_2\text{O}$ . Observed spectra from run J56.1.1

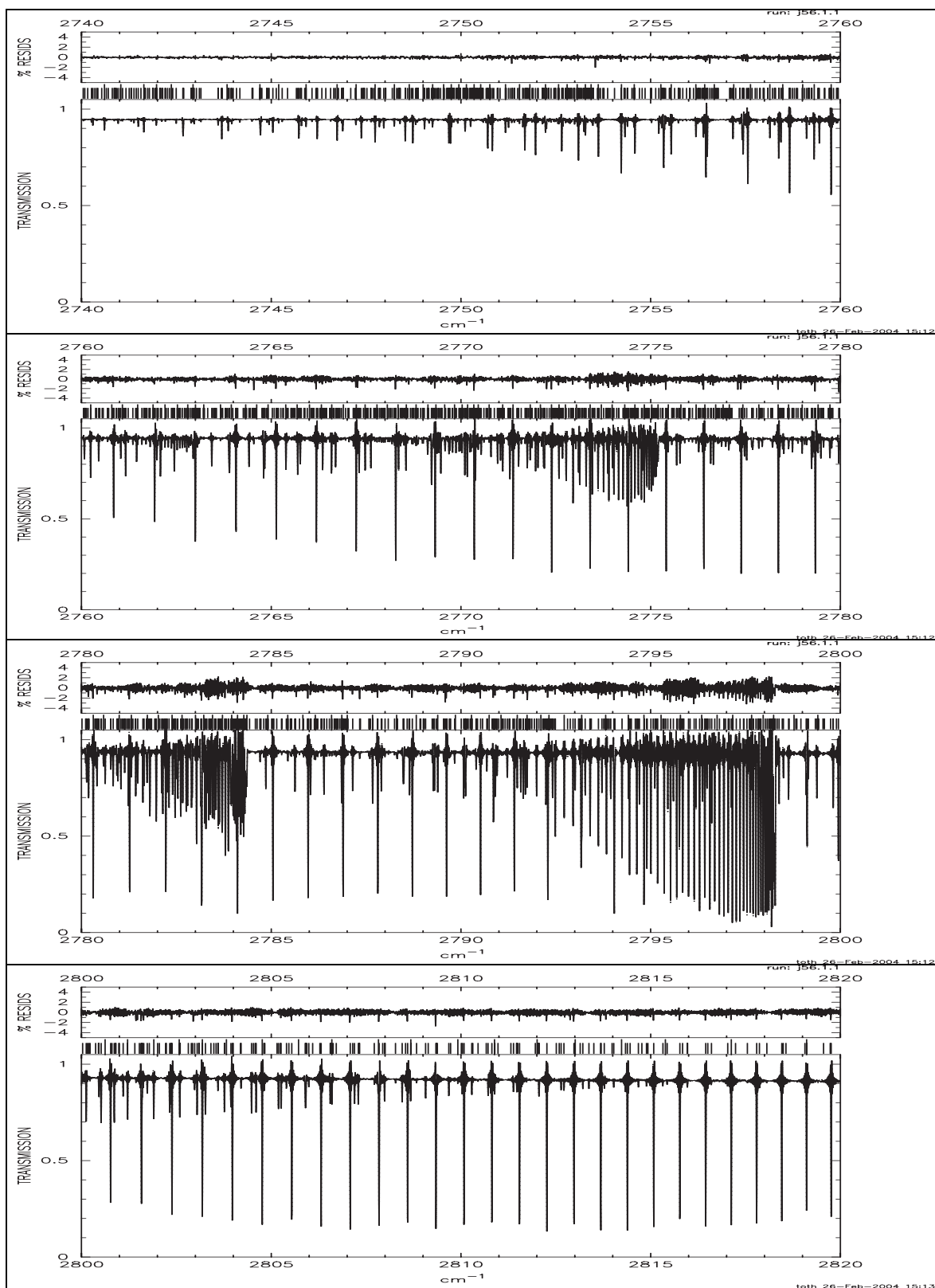


Figure G8. Observed and computed spectra of  $\text{N}_2\text{O}$ . Observed spectra from run J56.1.1

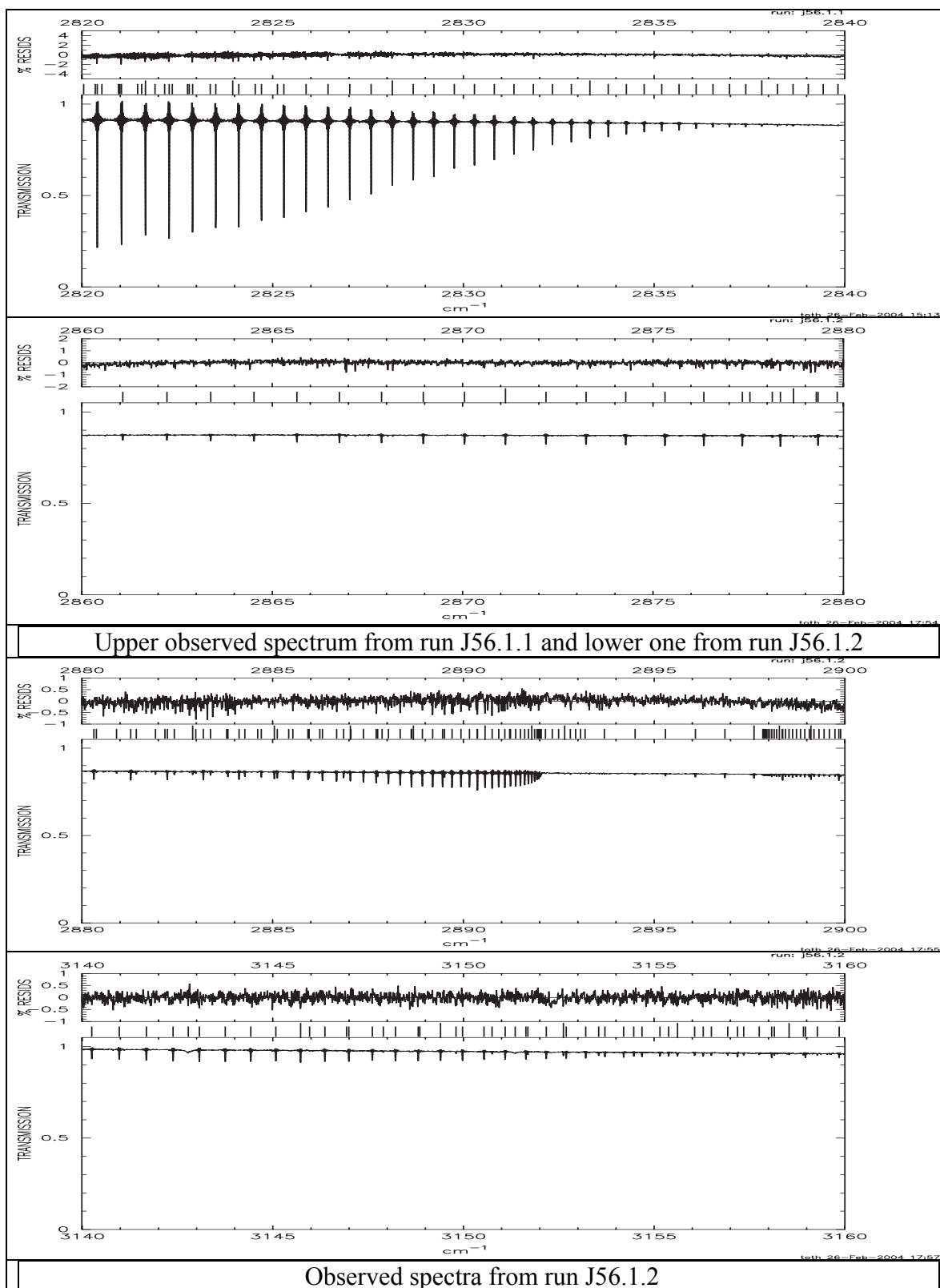


Figure G9. Observed and computed spectra of  $\text{N}_2\text{O}$

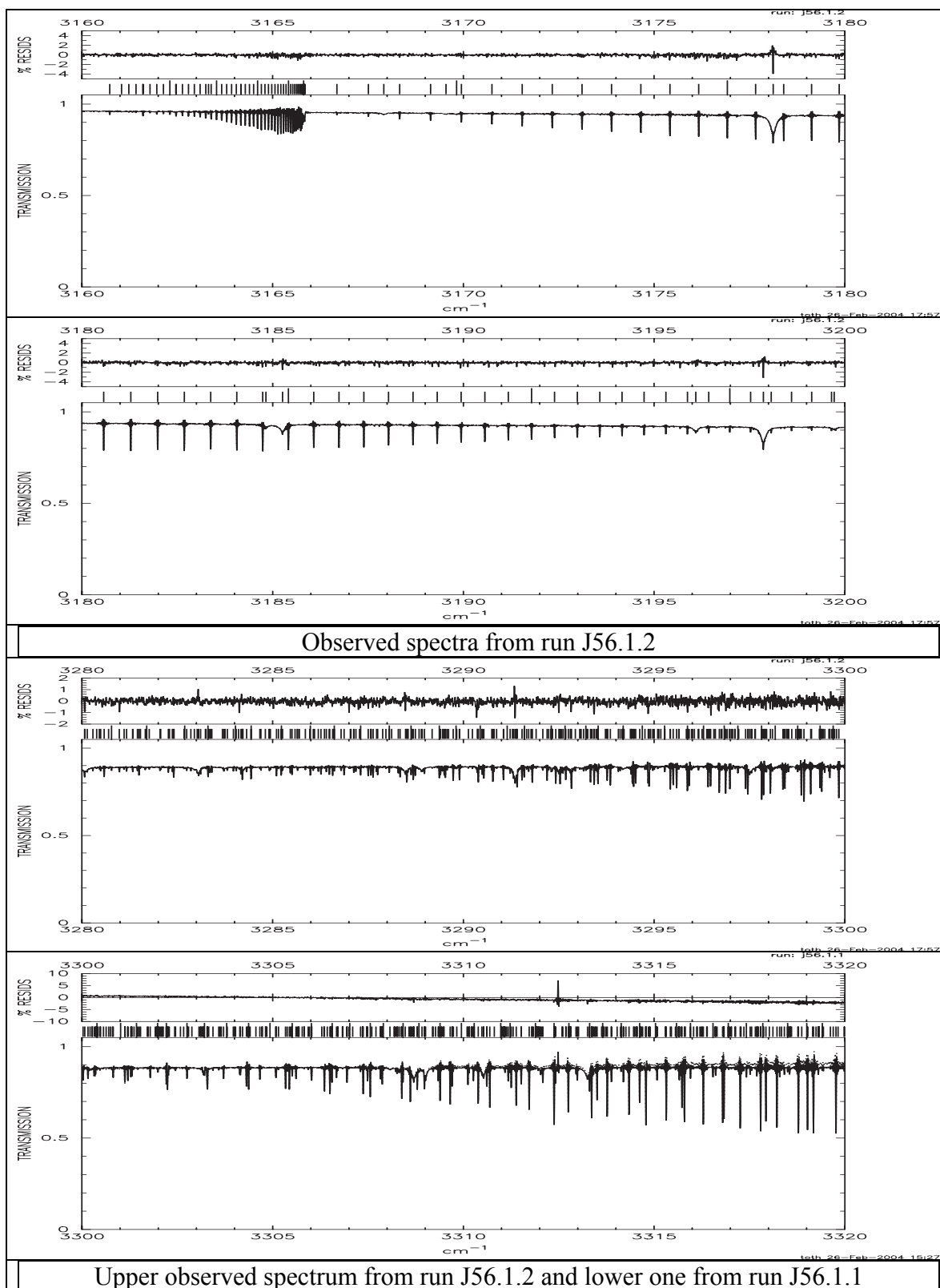


Figure G10. Observed and computed spectra of N<sub>2</sub>O. Air-broadened H<sub>2</sub>O absorptions are observed and computed.

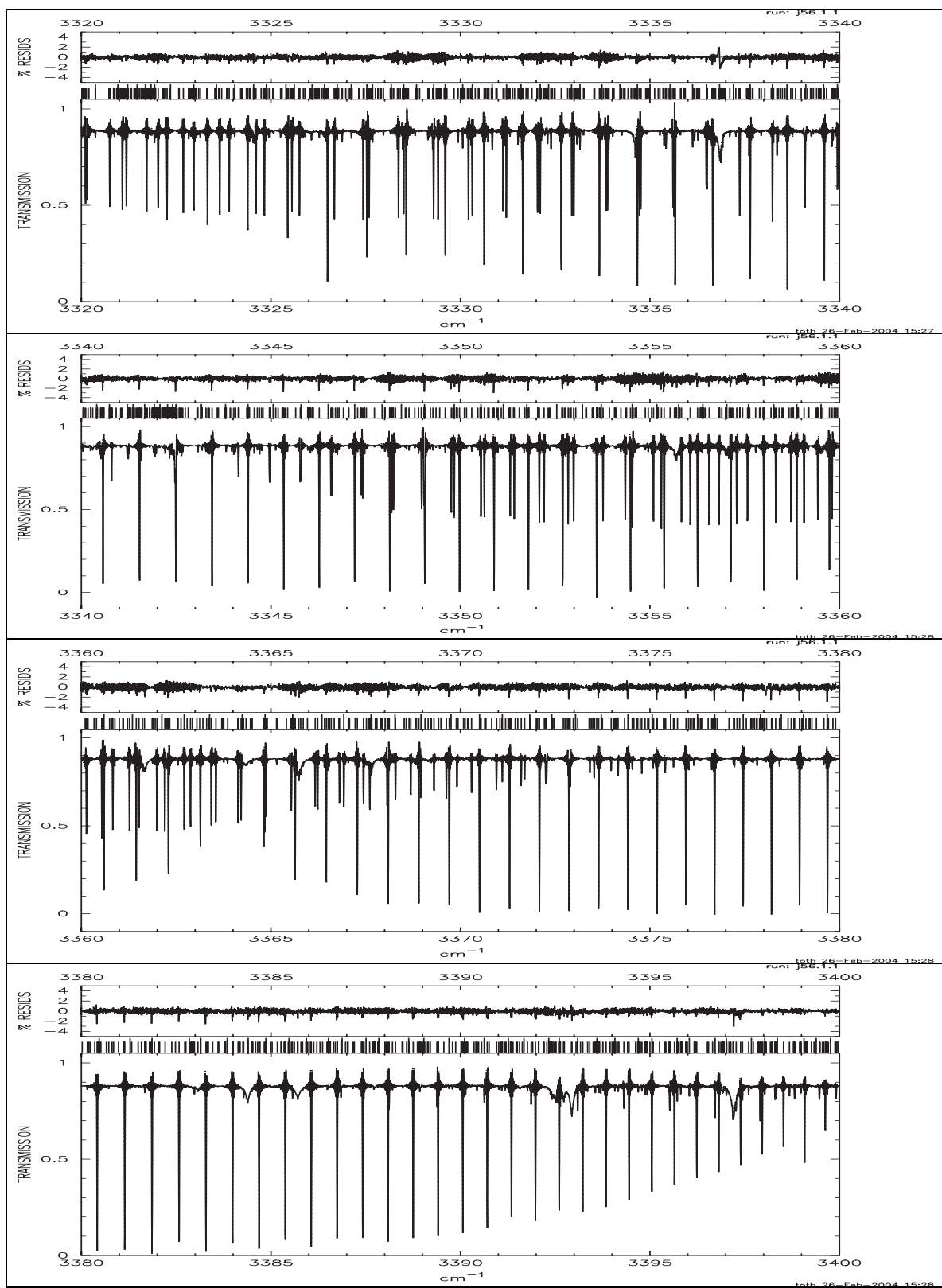


Figure G11. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.1. Air-broadened H<sub>2</sub>O absorptions are observed and computed.



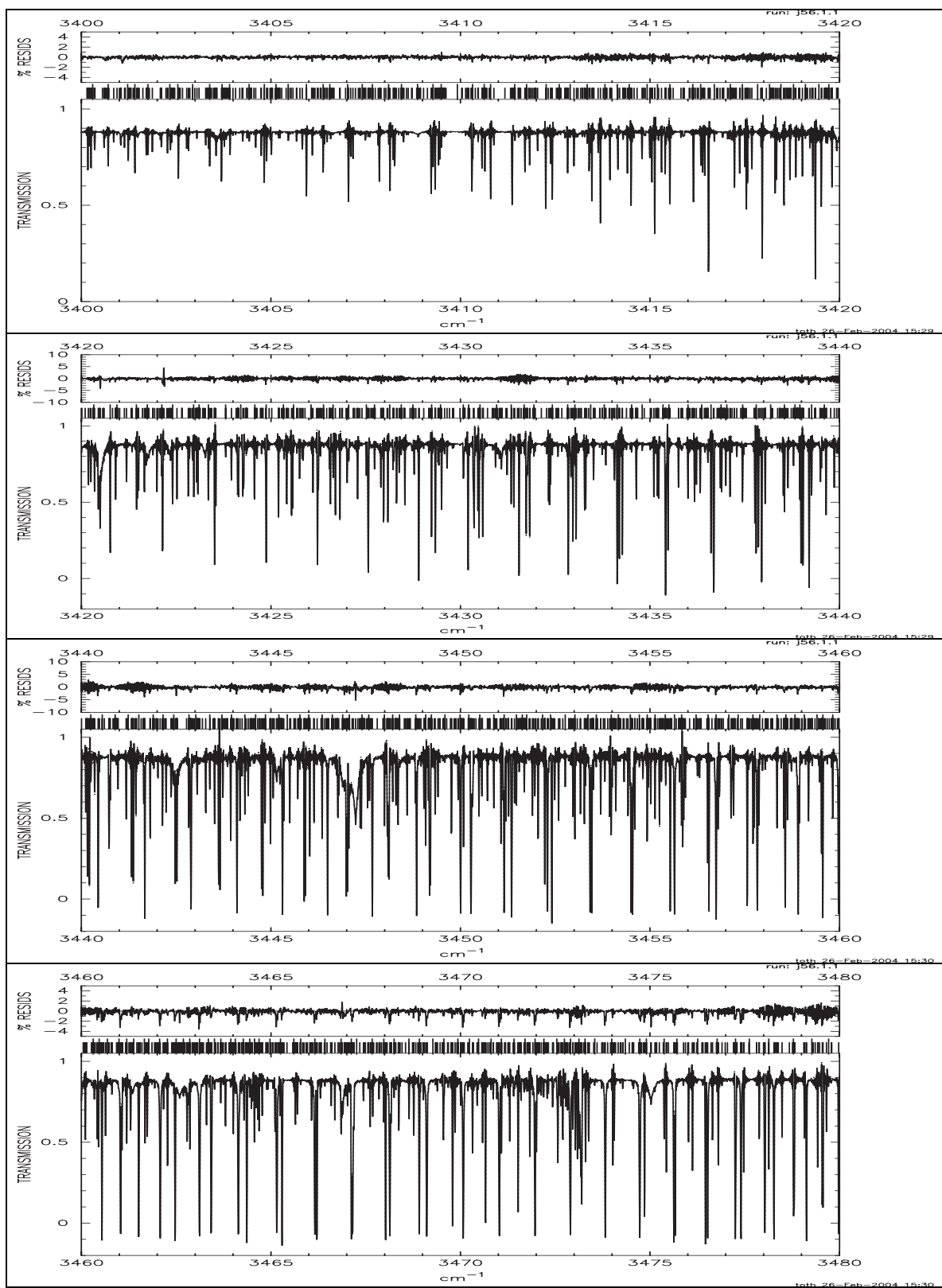


Figure G12. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.1. Air-broadened H<sub>2</sub>O absorptions are observed and computed.

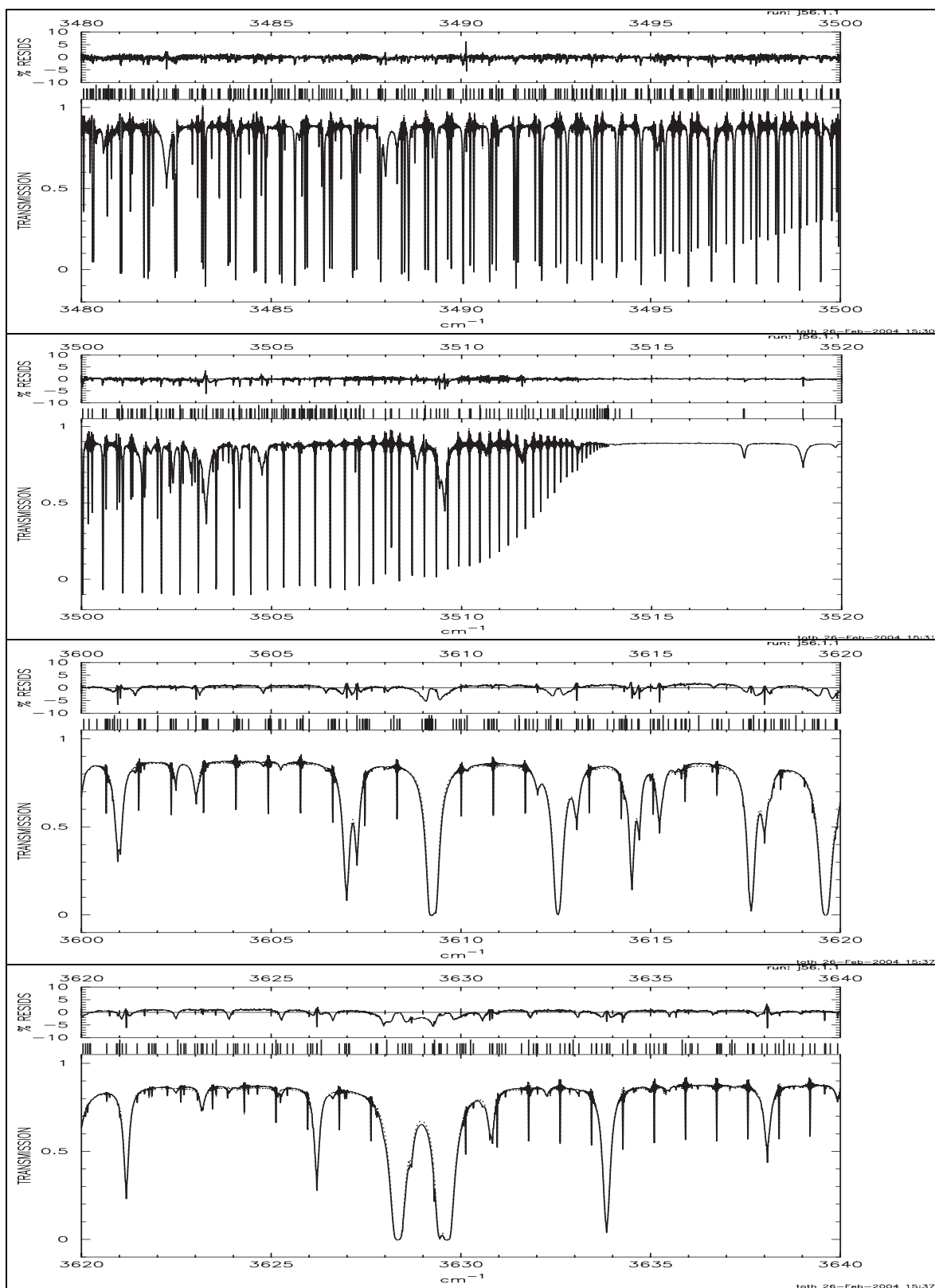


Figure G13. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.1. Air-broadened H<sub>2</sub>O absorptions are observed and computed.

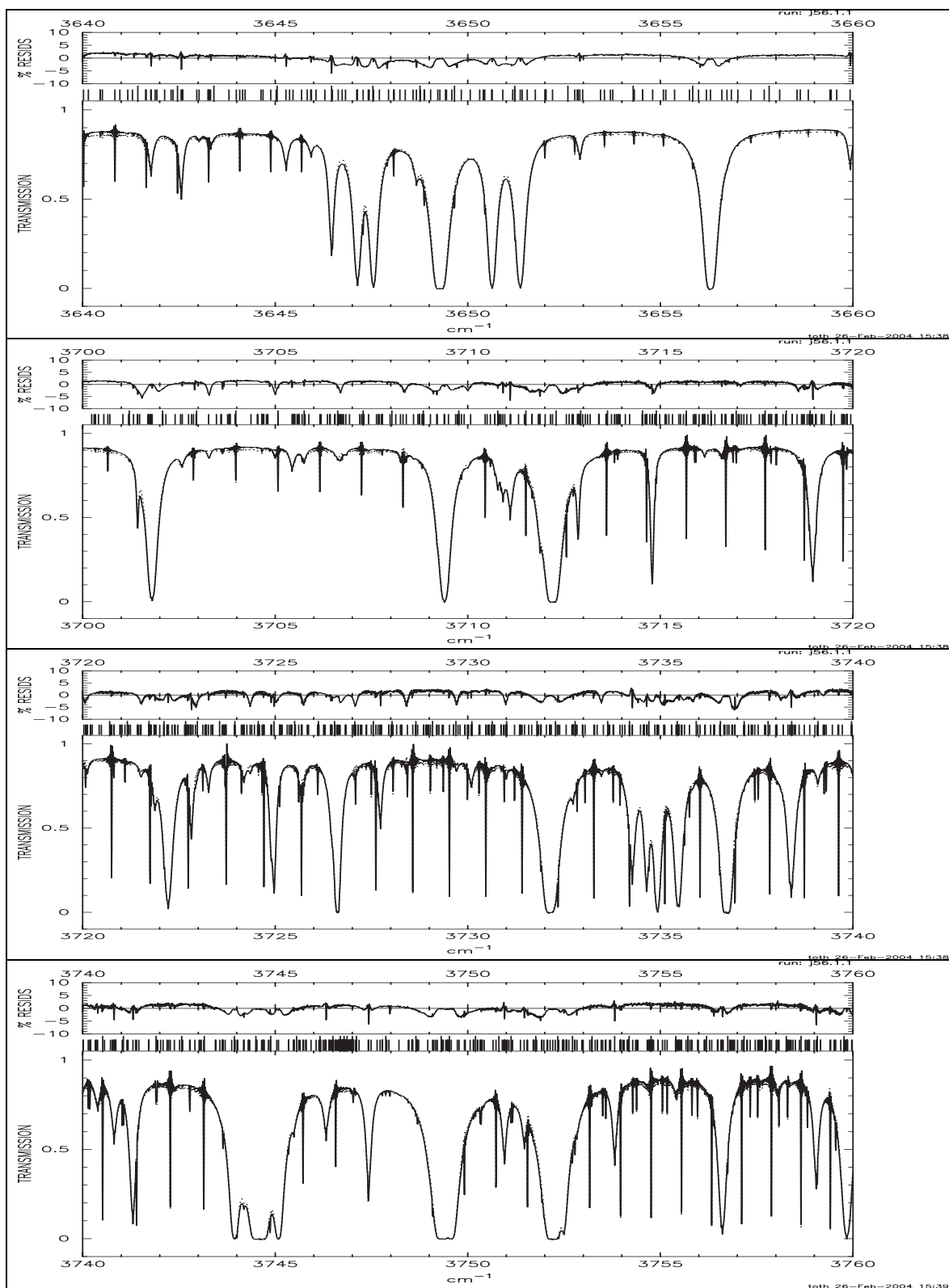


Figure G14. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.1. Air-broadened H<sub>2</sub>O absorptions are observed and computed.

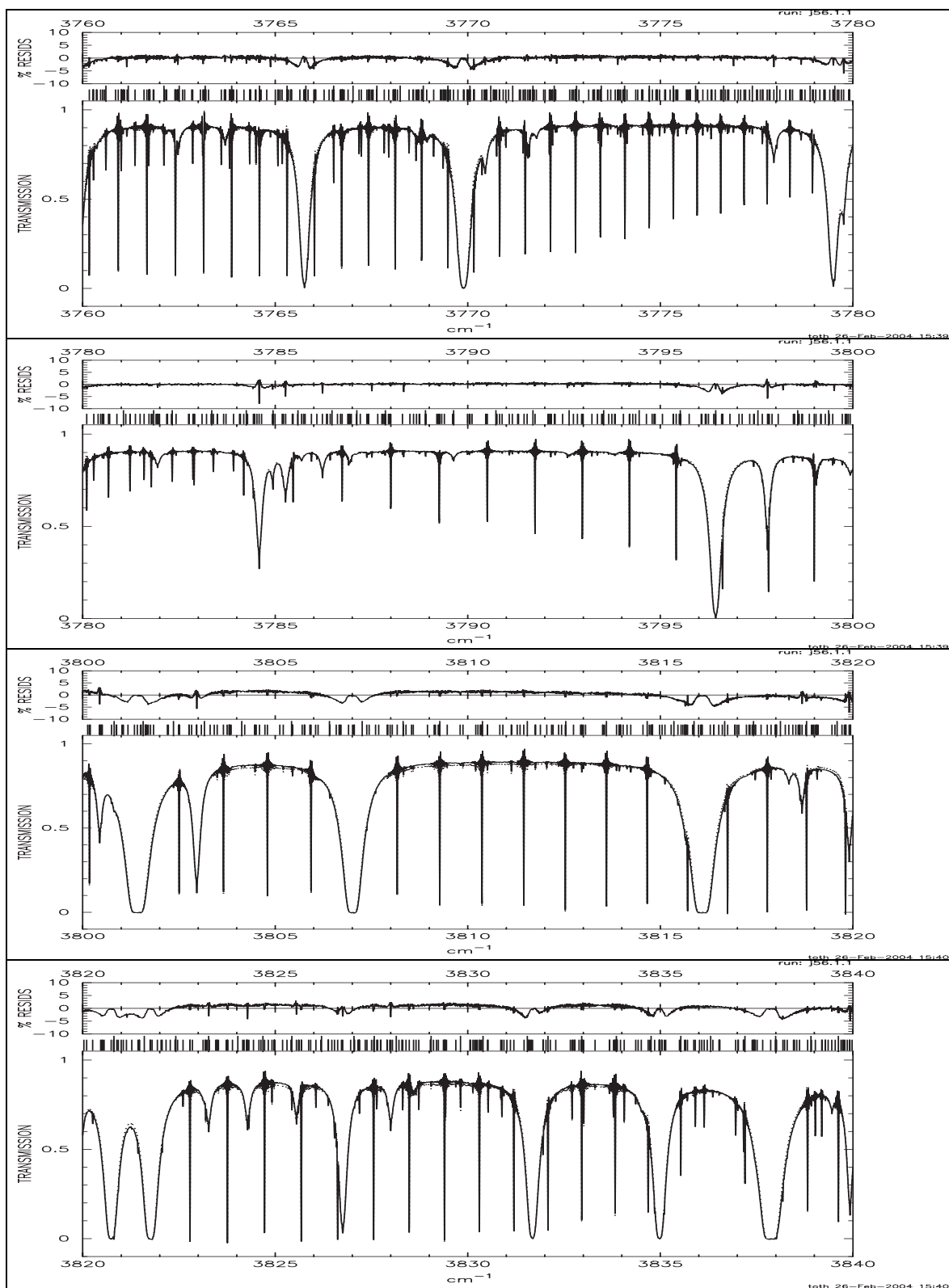


Figure G15. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.1. Air-broadened H<sub>2</sub>O absorptions are observed and computed.

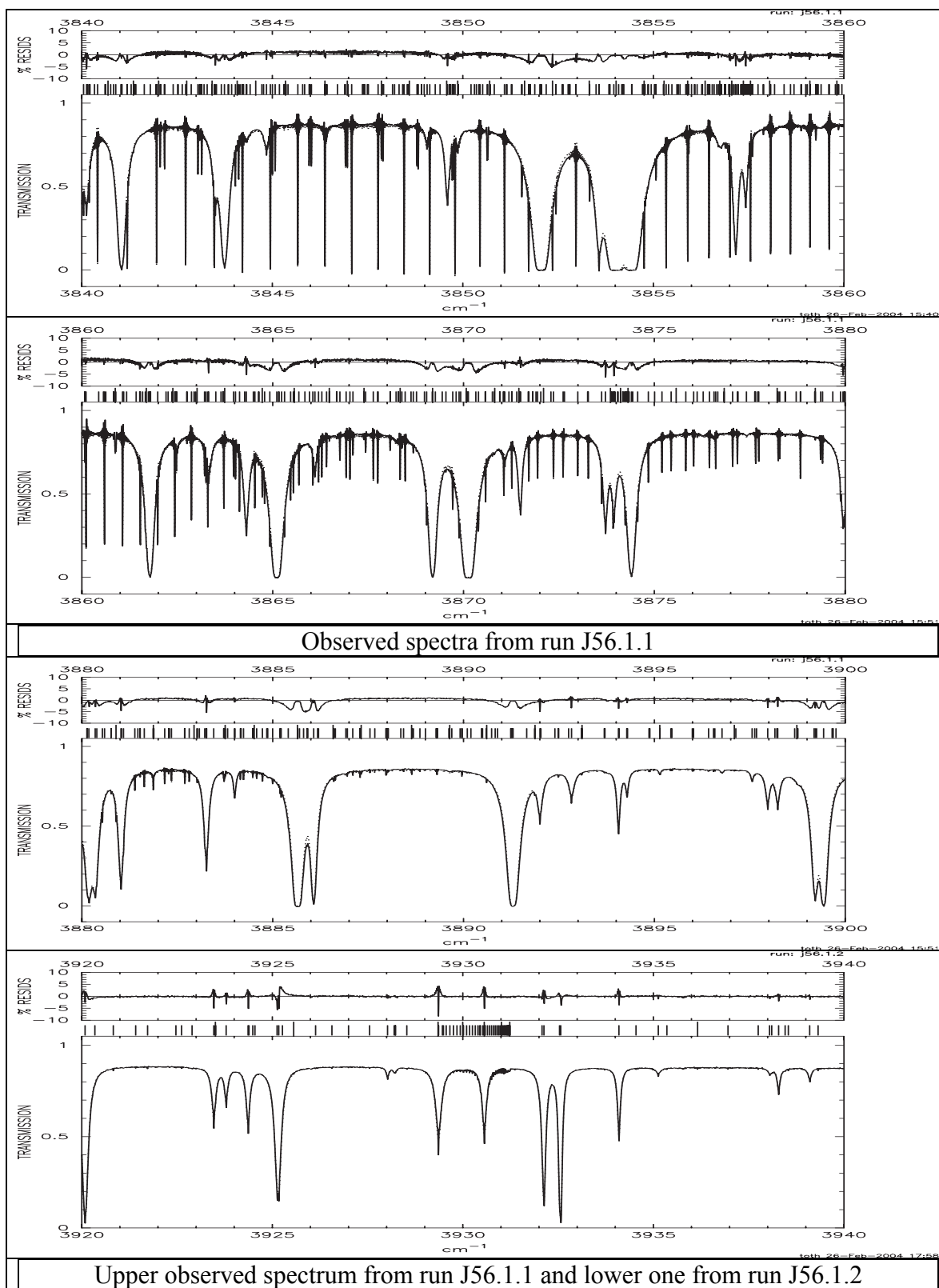


Figure G16. Observed and computed spectra of N<sub>2</sub>O. Air-broadened H<sub>2</sub>O absorptions are observed and computed.

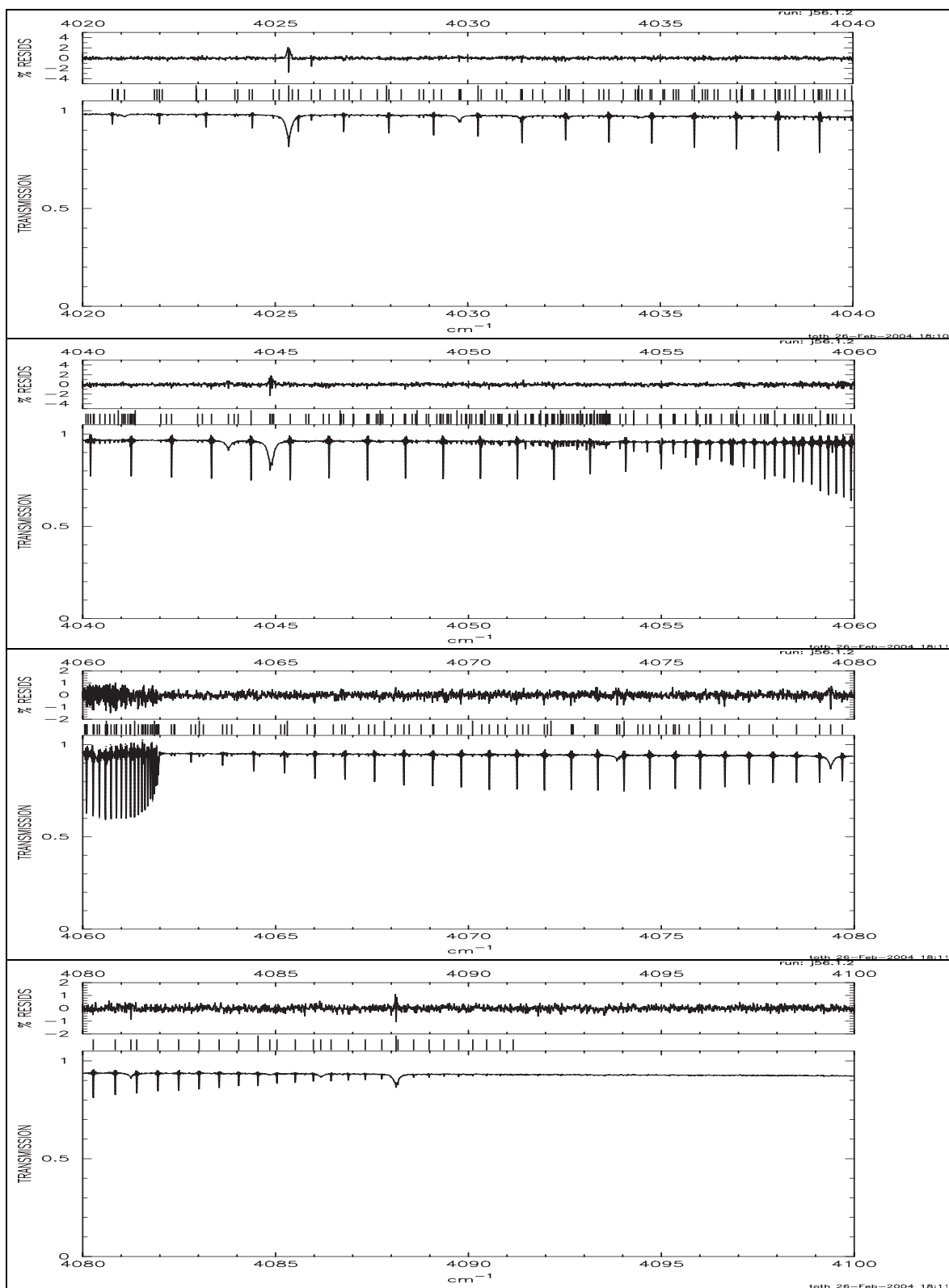


Figure G17. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.2. Air-broadened H<sub>2</sub>O absorptions are observed and computed.

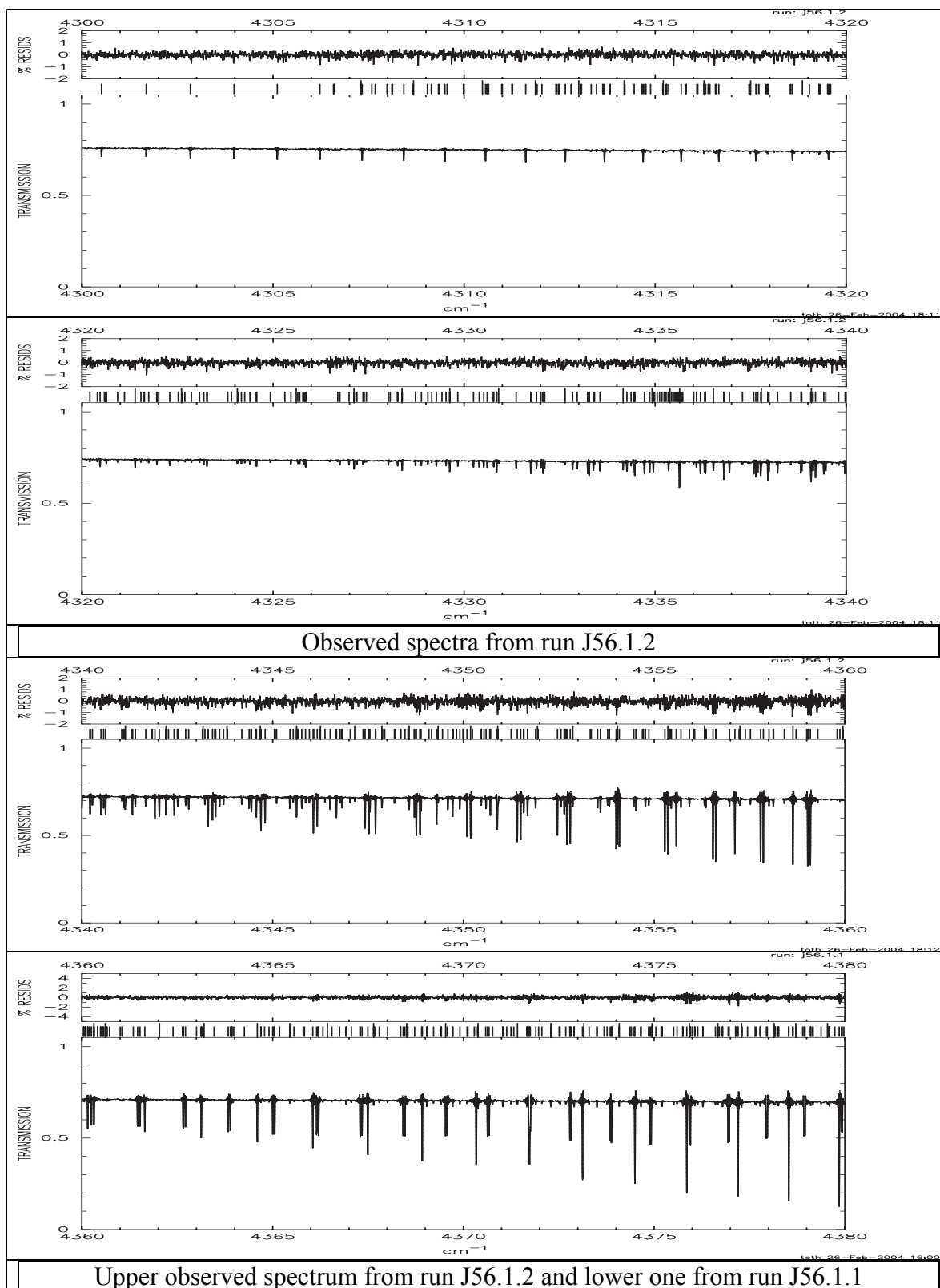


Figure G18. Observed and computed spectra of  $\text{N}_2\text{O}$

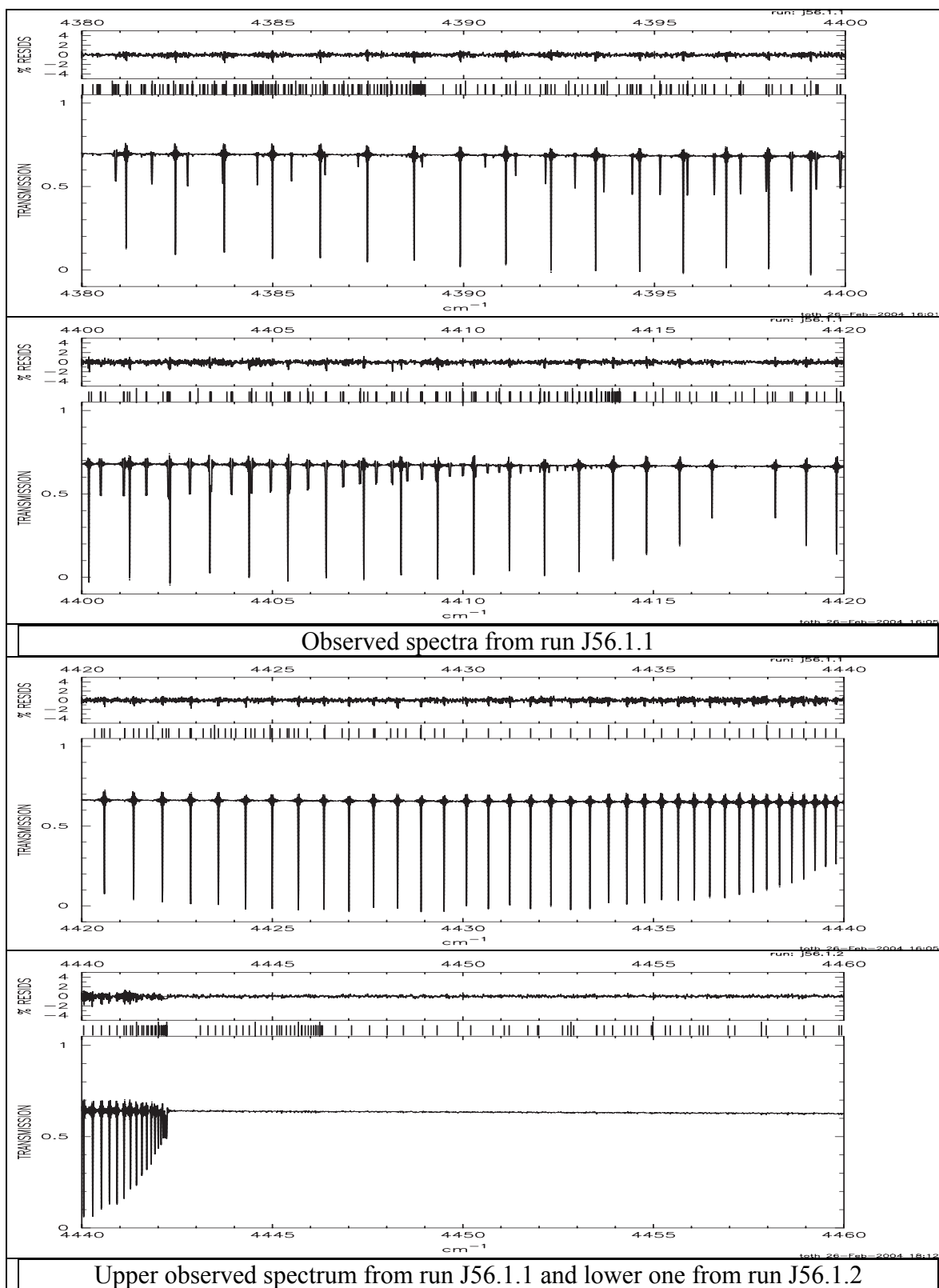


Figure G19. Observed and computed spectra of N<sub>2</sub>O



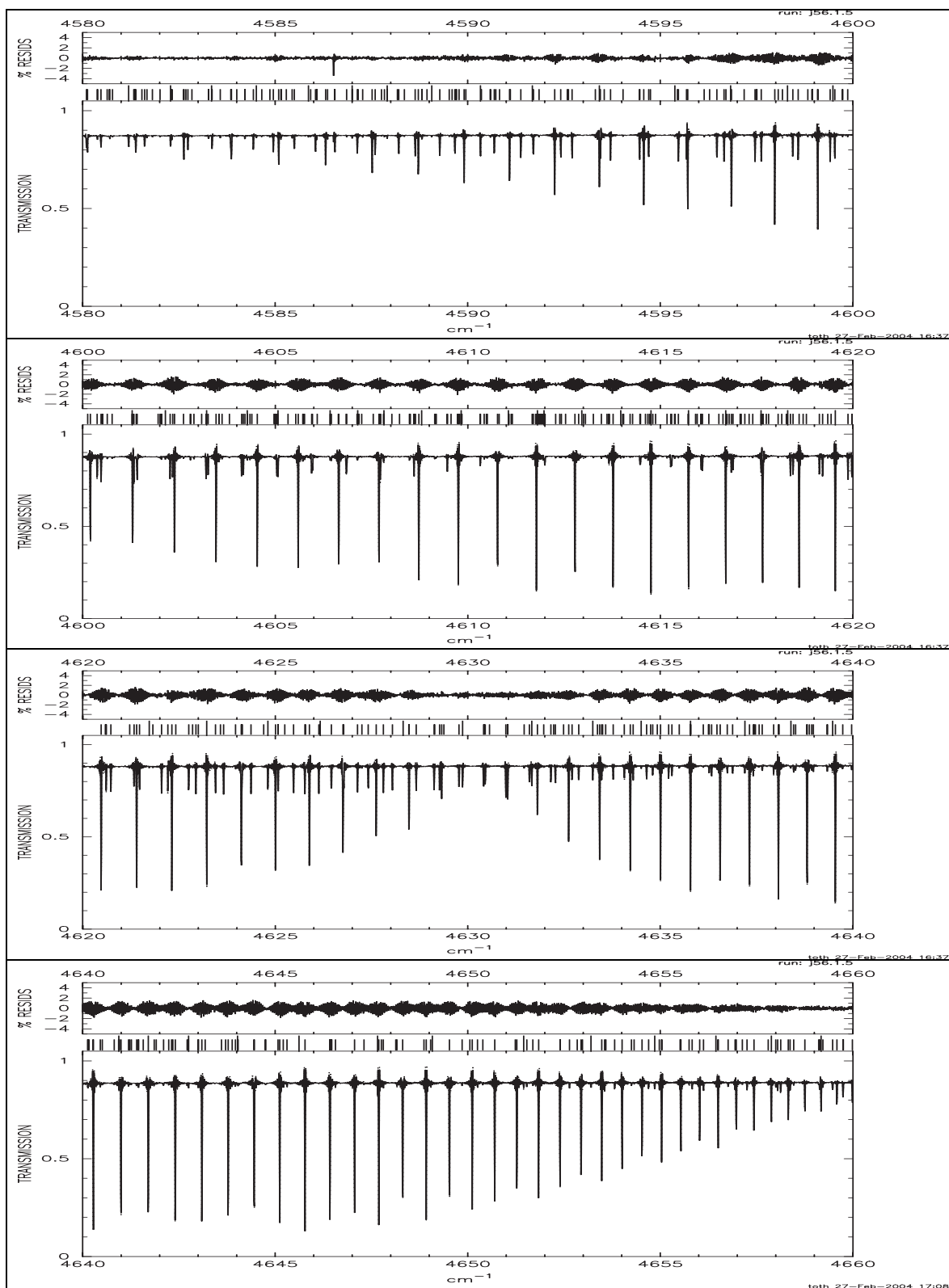


Figure G20. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5.

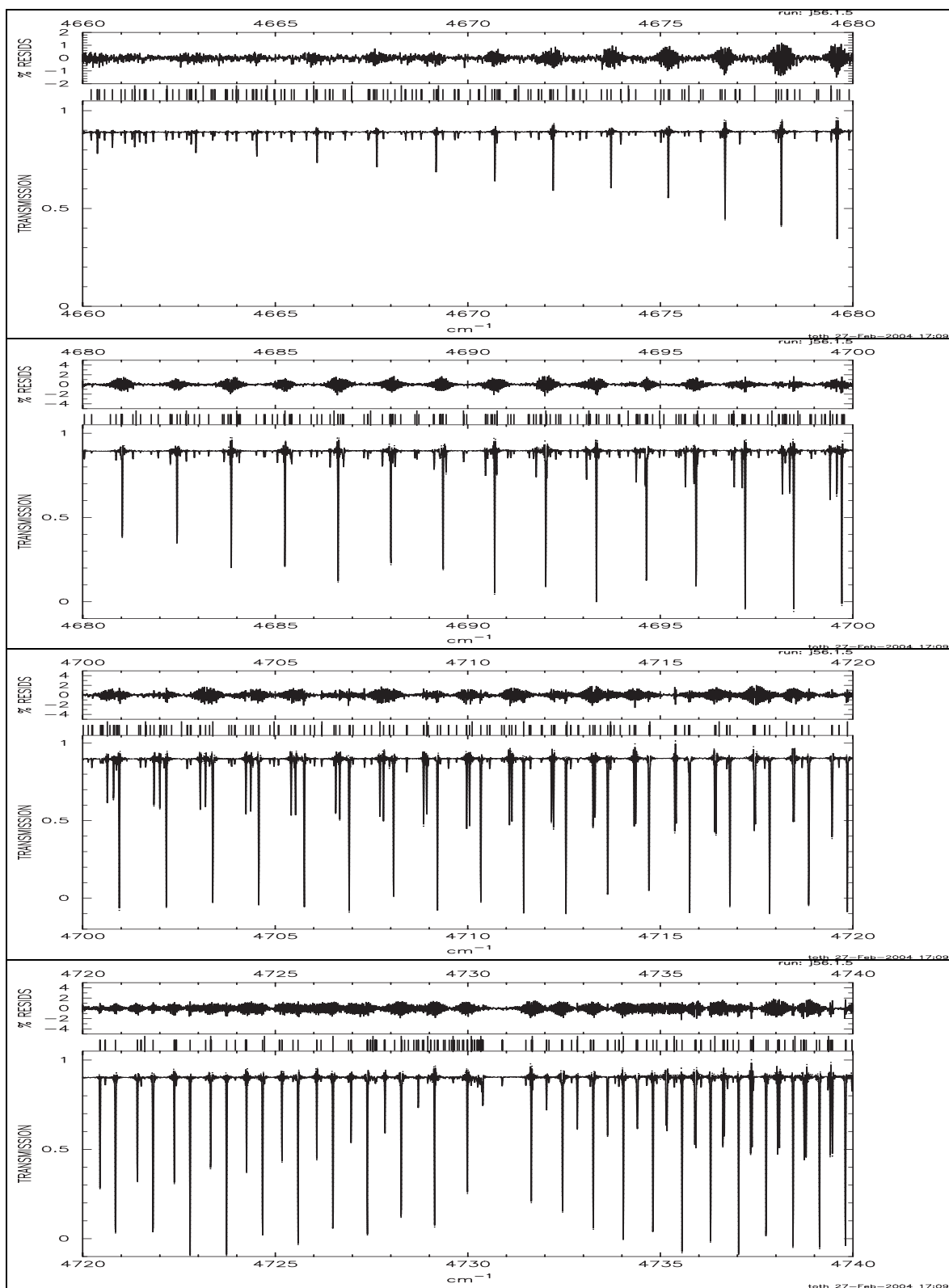


Figure G21. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5.

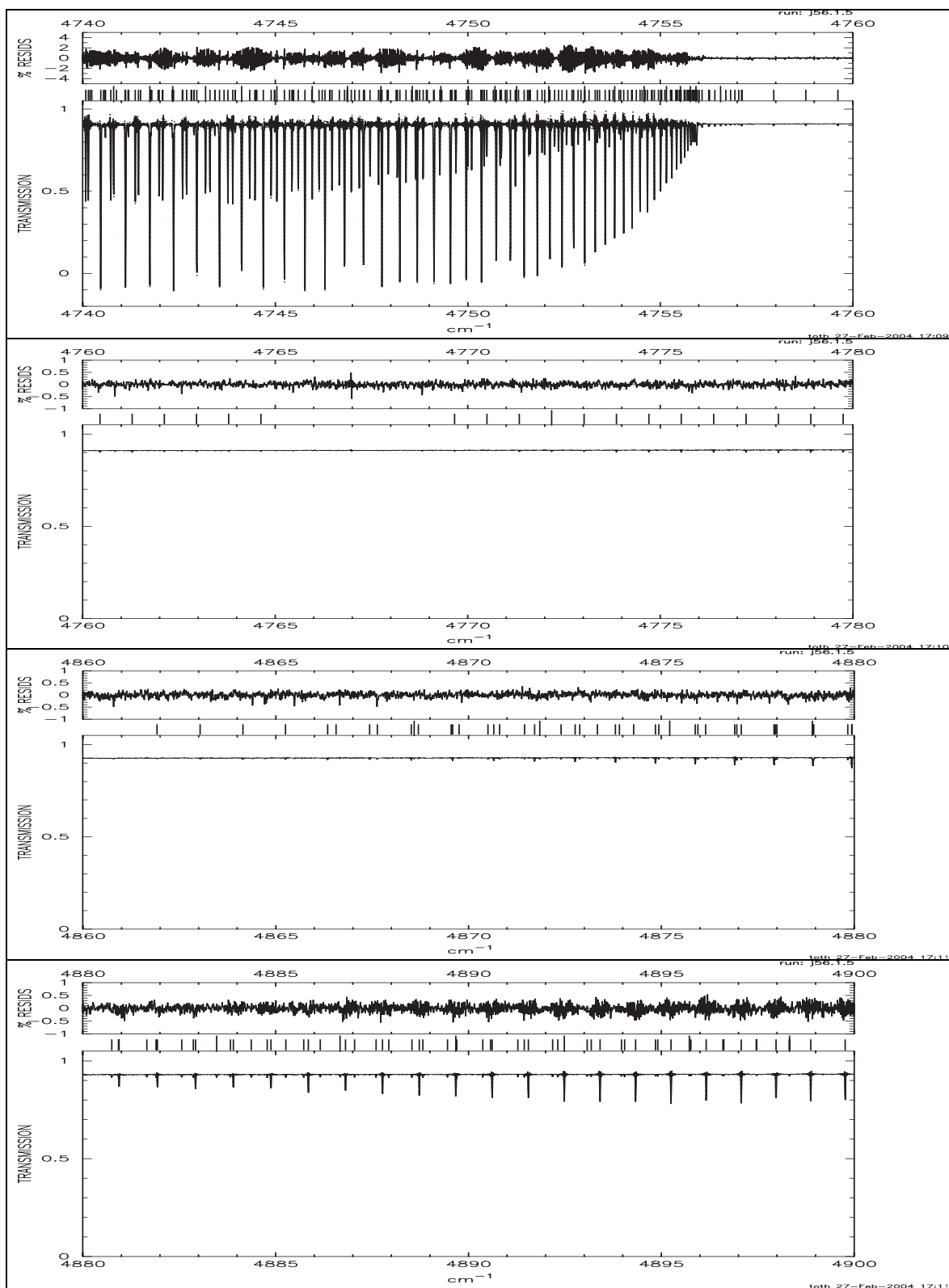


Figure G22. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5.

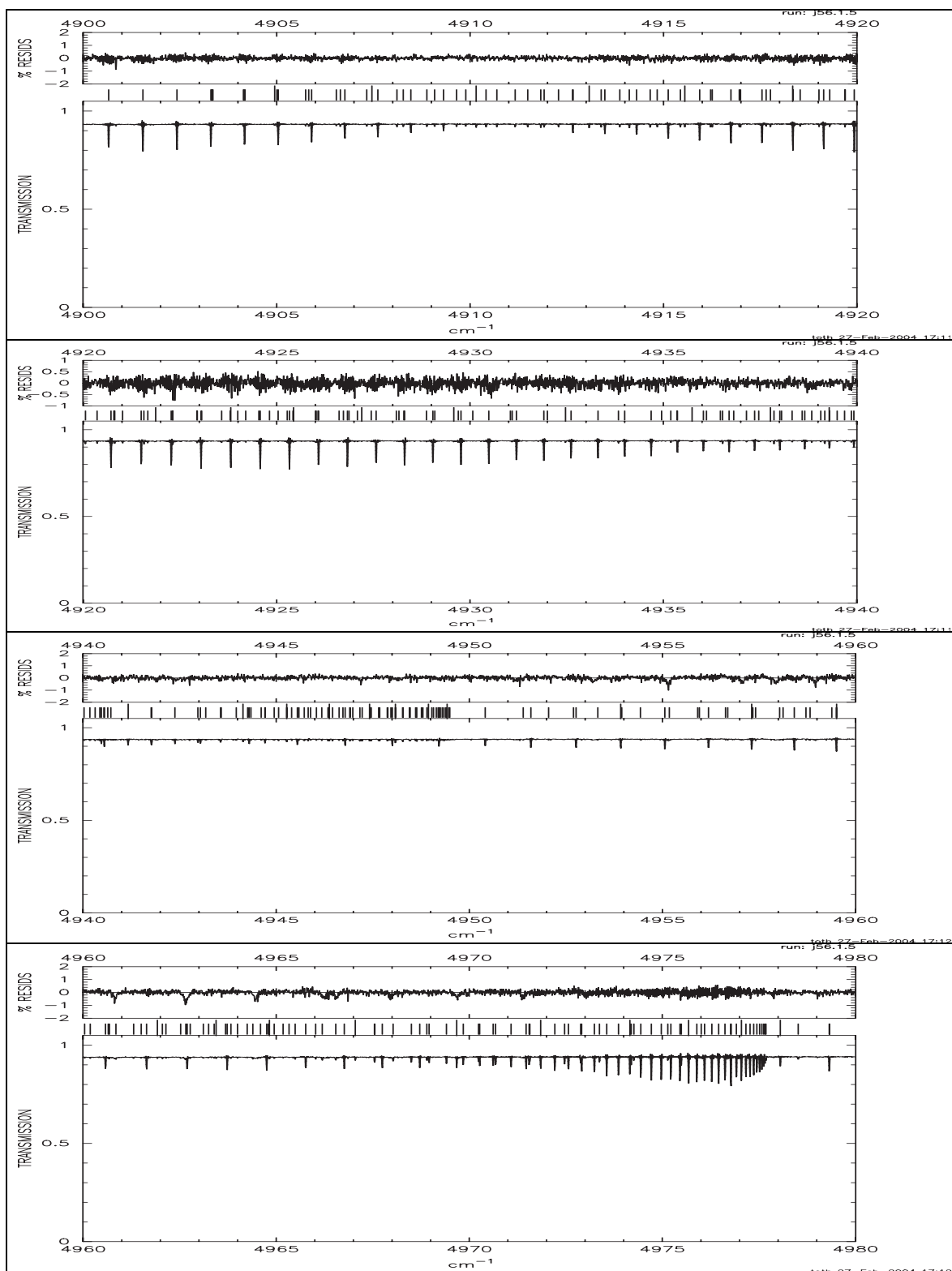


Figure G23. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5. Slight CO<sub>2</sub> absorptions due to laboratory room air also observed, but not computed, in bottom two spectra.

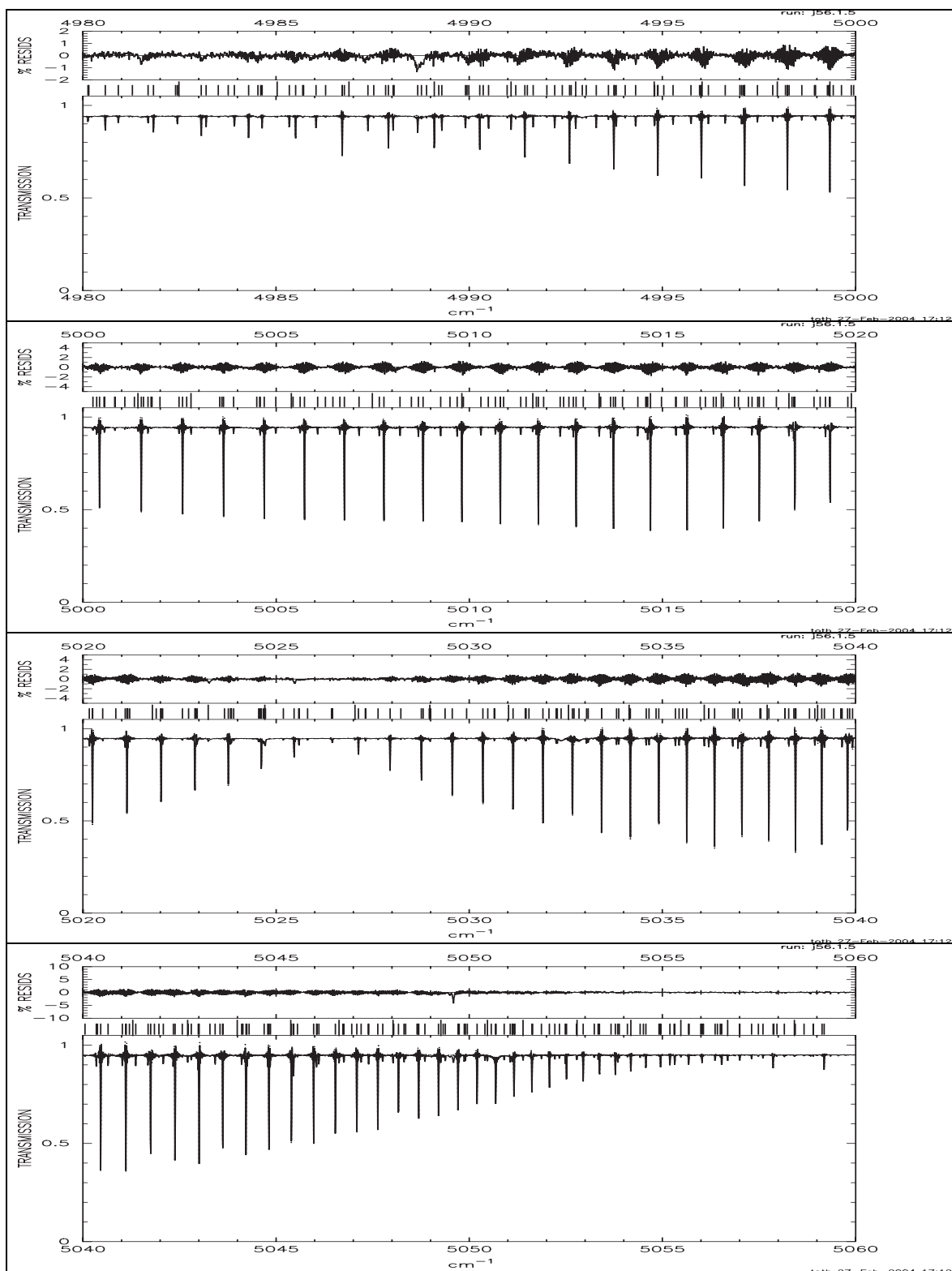


Figure G24. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5. Slight CO<sub>2</sub> absorptions due to laboratory room air observed, but not computed, in the top spectra.

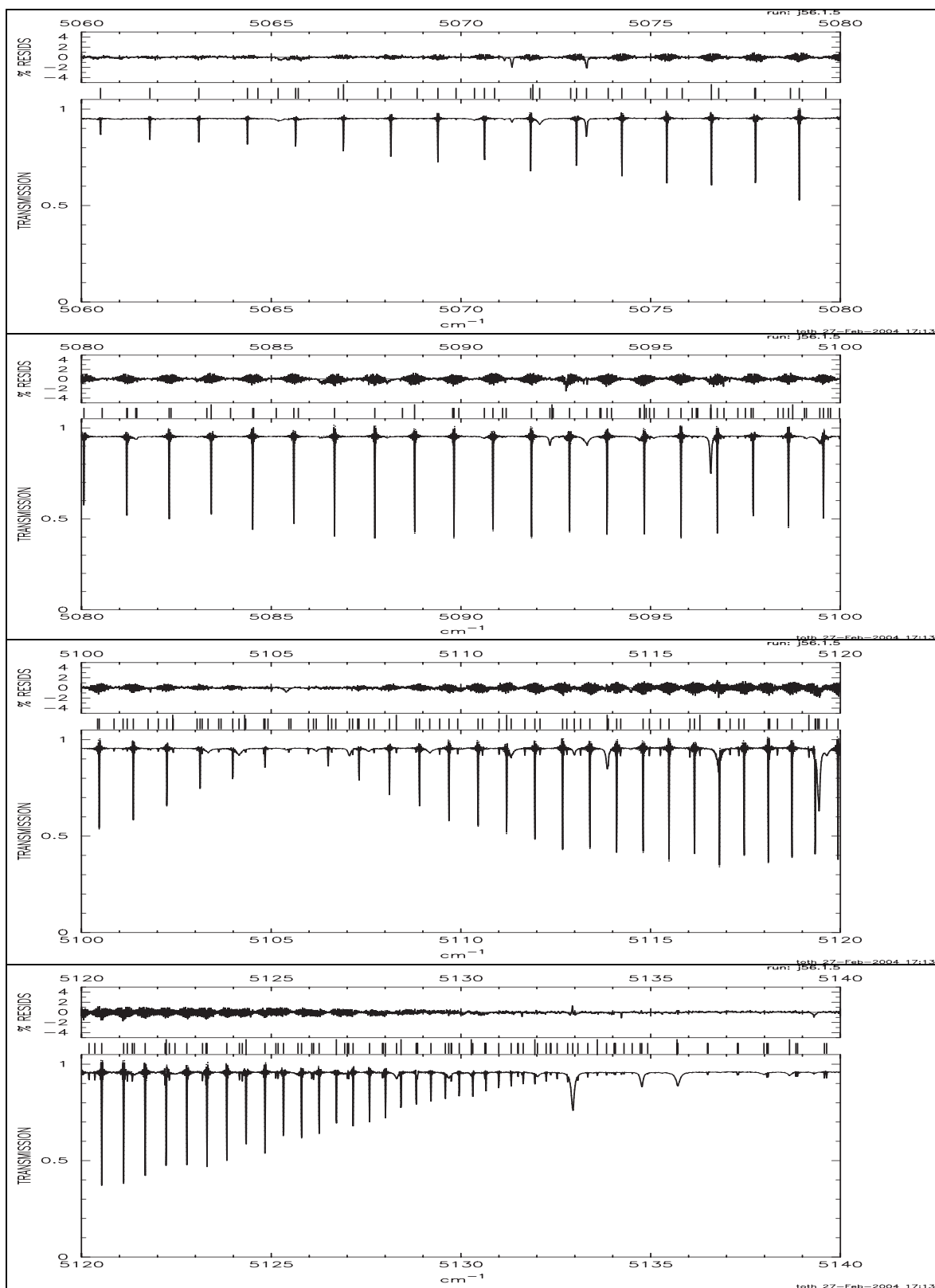


Figure G25. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5. Air-broadened H<sub>2</sub>O absorptions are observed and computed (except for top spectrum).

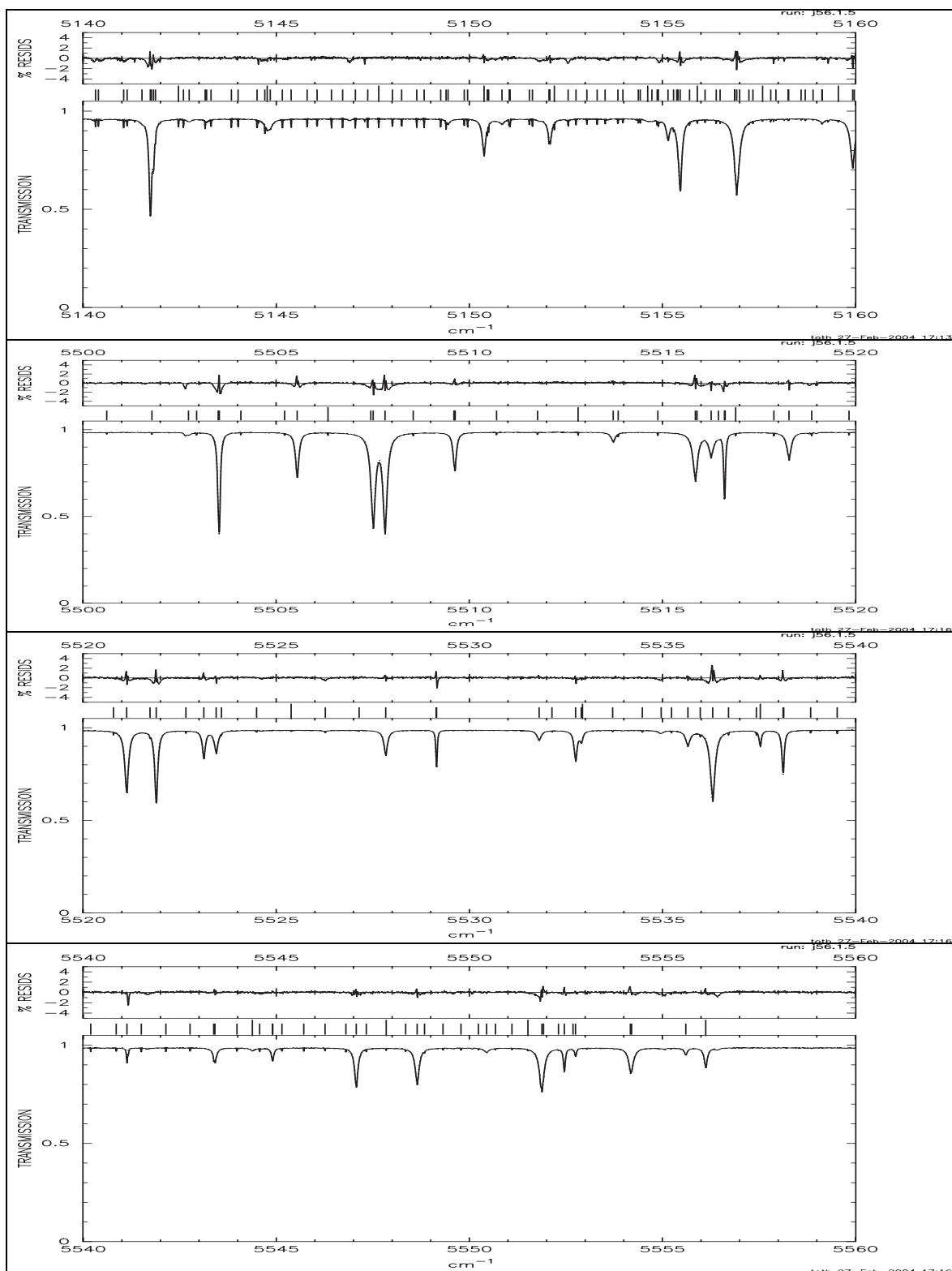


Figure G26. Observed and computed spectra of  $\text{N}_2\text{O}$ . Observed spectra from run J56.1.5. Air-broadened  $\text{H}_2\text{O}$  absorptions are observed and computed (except for some weak absorptions).

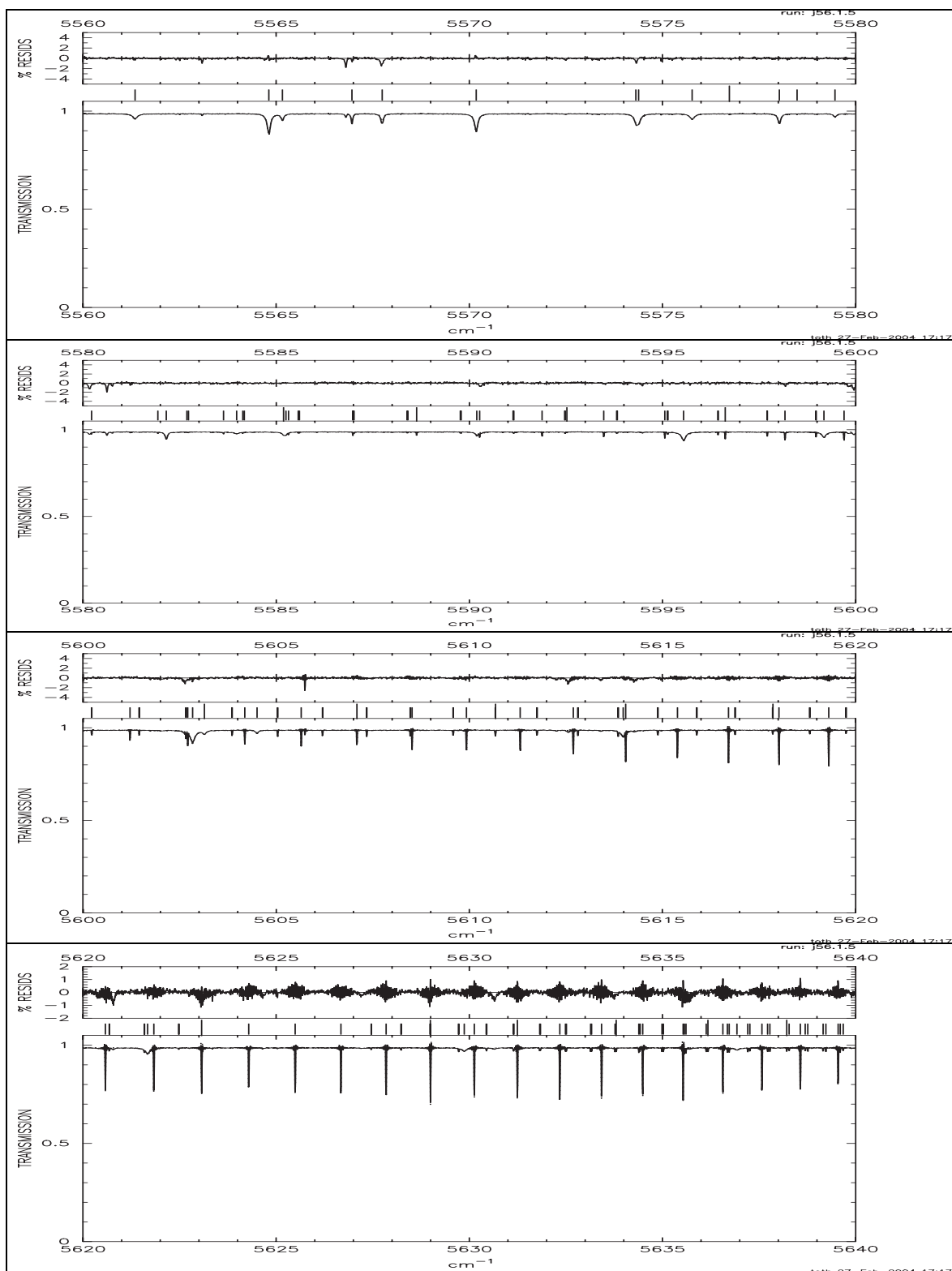


Figure G27. Observed and computed spectra of  $\text{N}_2\text{O}$ . Observed spectra from run J56.1.5. Air-broadened  $\text{H}_2\text{O}$  absorptions are observed and computed (except for some weak absorptions).



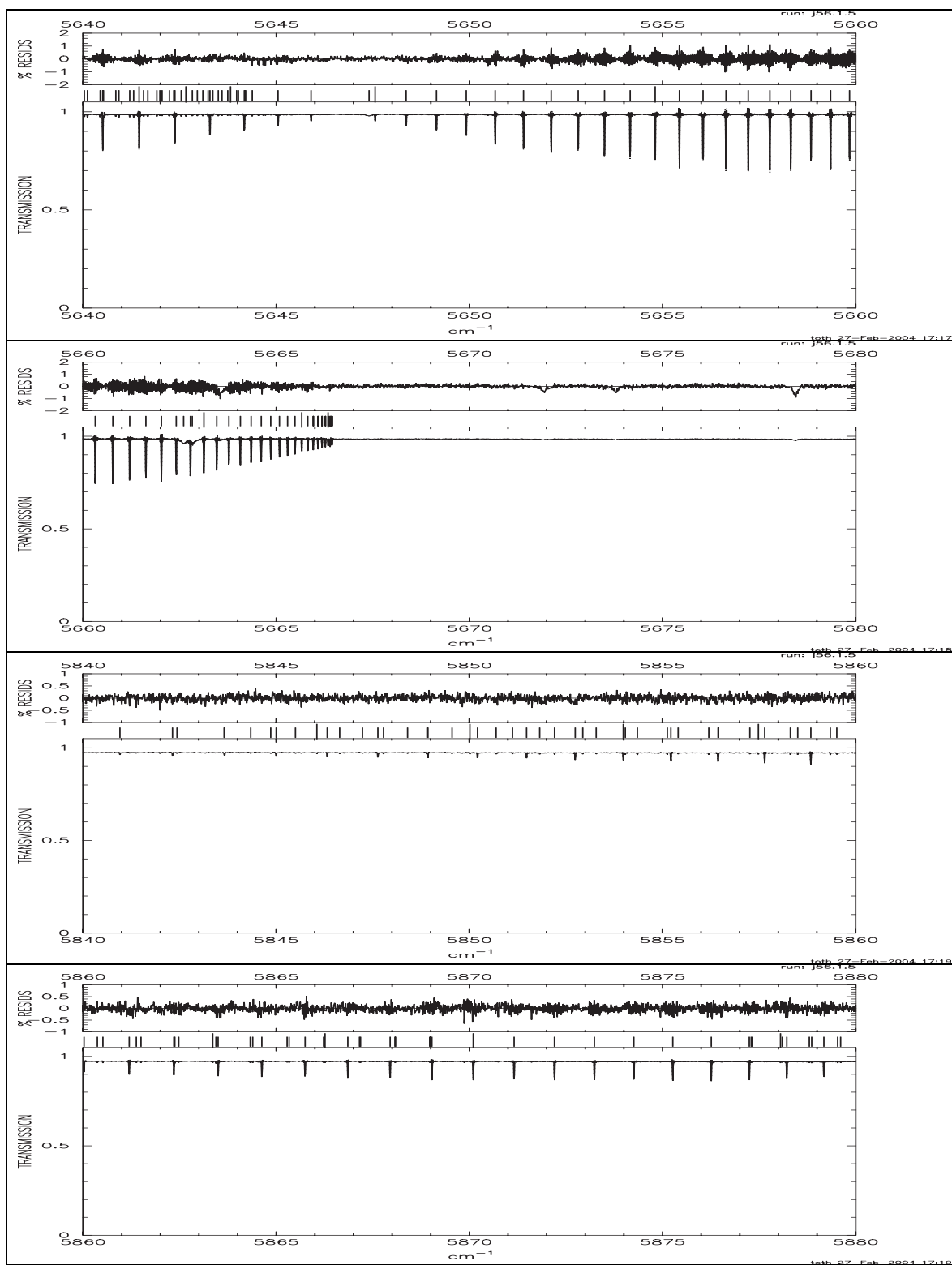


Figure G28. Observed and computed spectra of  $\text{N}_2\text{O}$ . Observed spectra from run J56.1.5. Weak air-broadened  $\text{H}_2\text{O}$  absorptions are observed but not computed.

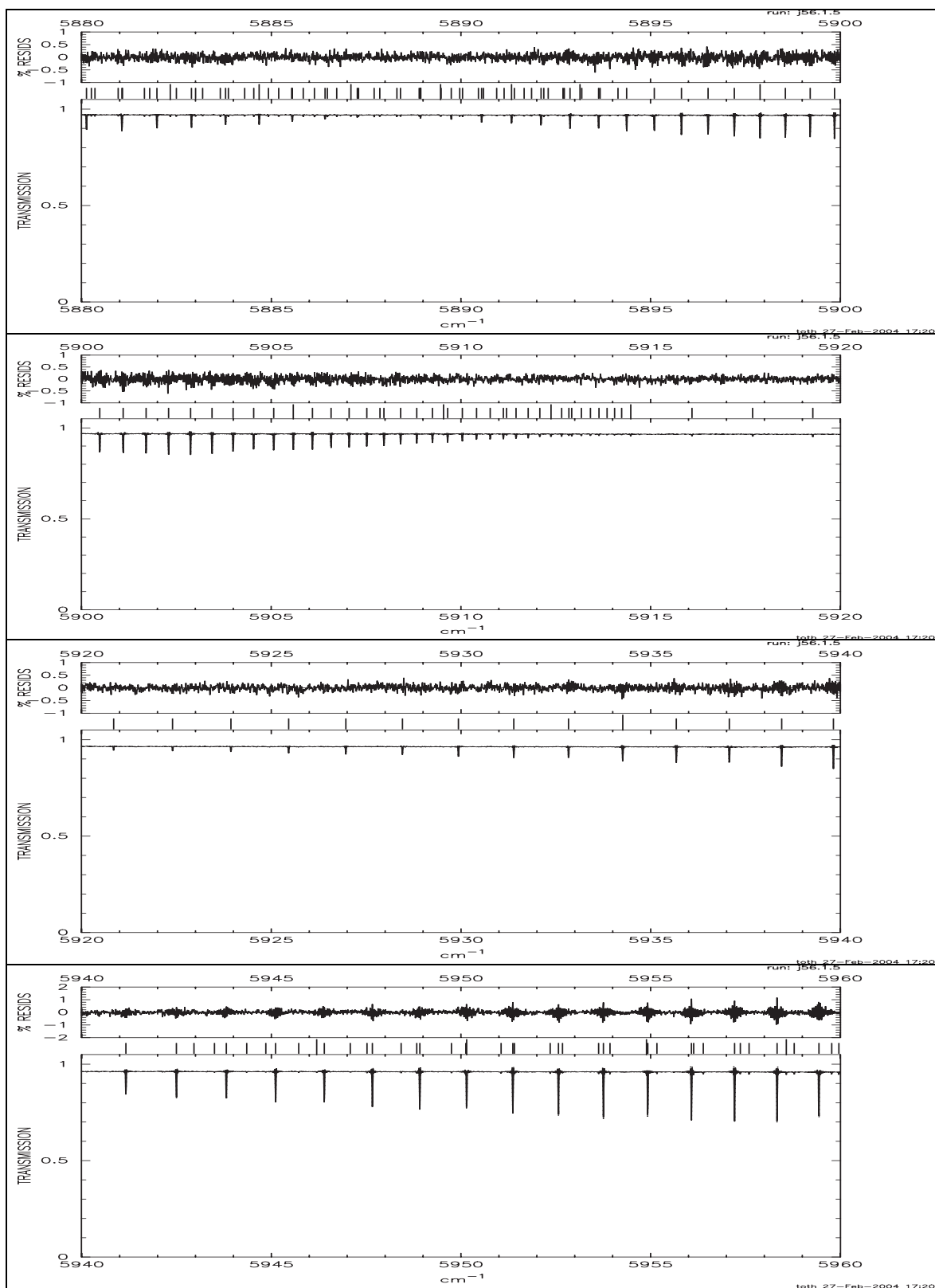


Figure G29. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5.

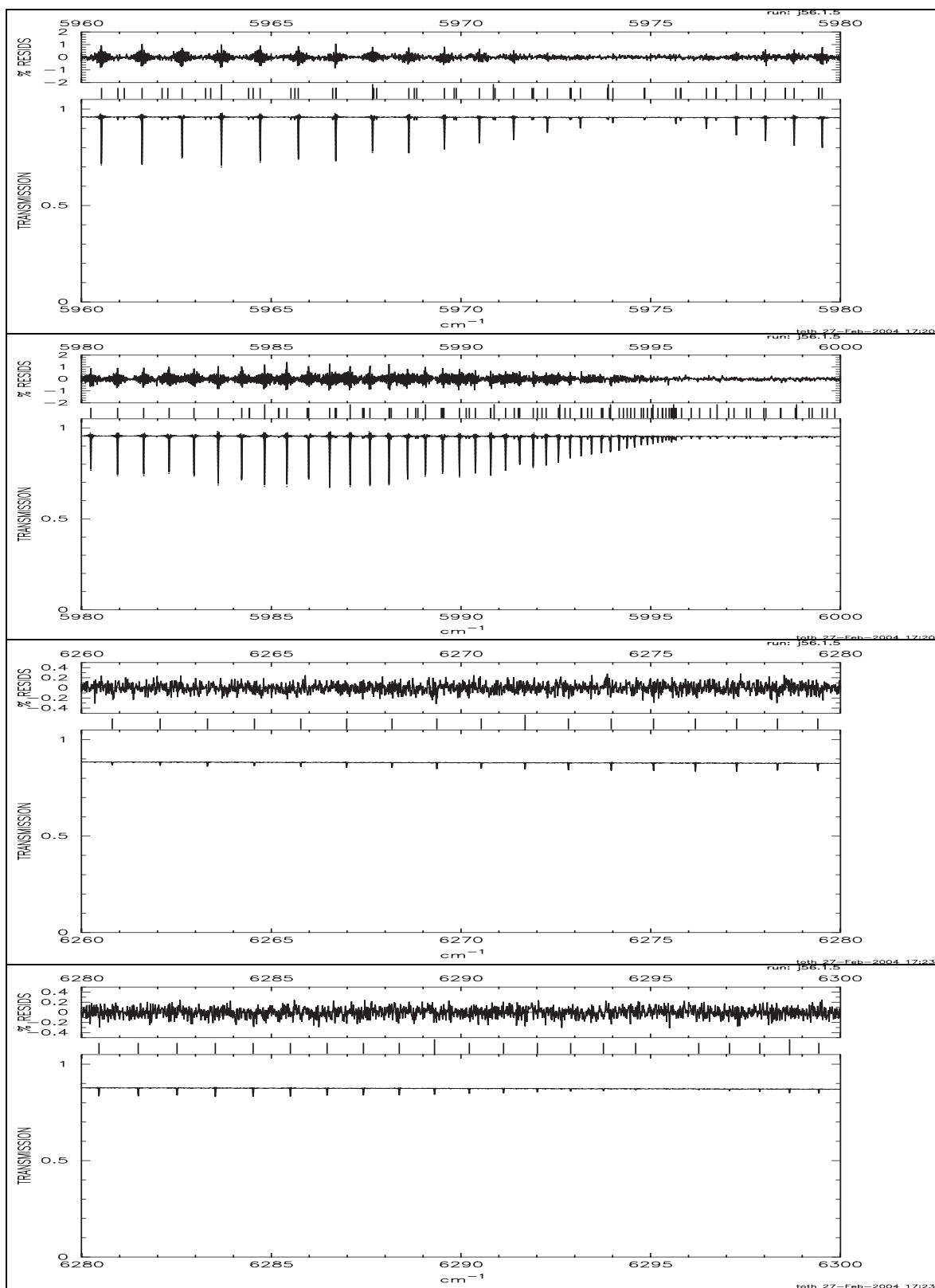


Figure G30. Observed and computed spectra of  $\text{N}_2\text{O}$ . Observed spectra from run J56.1.5.

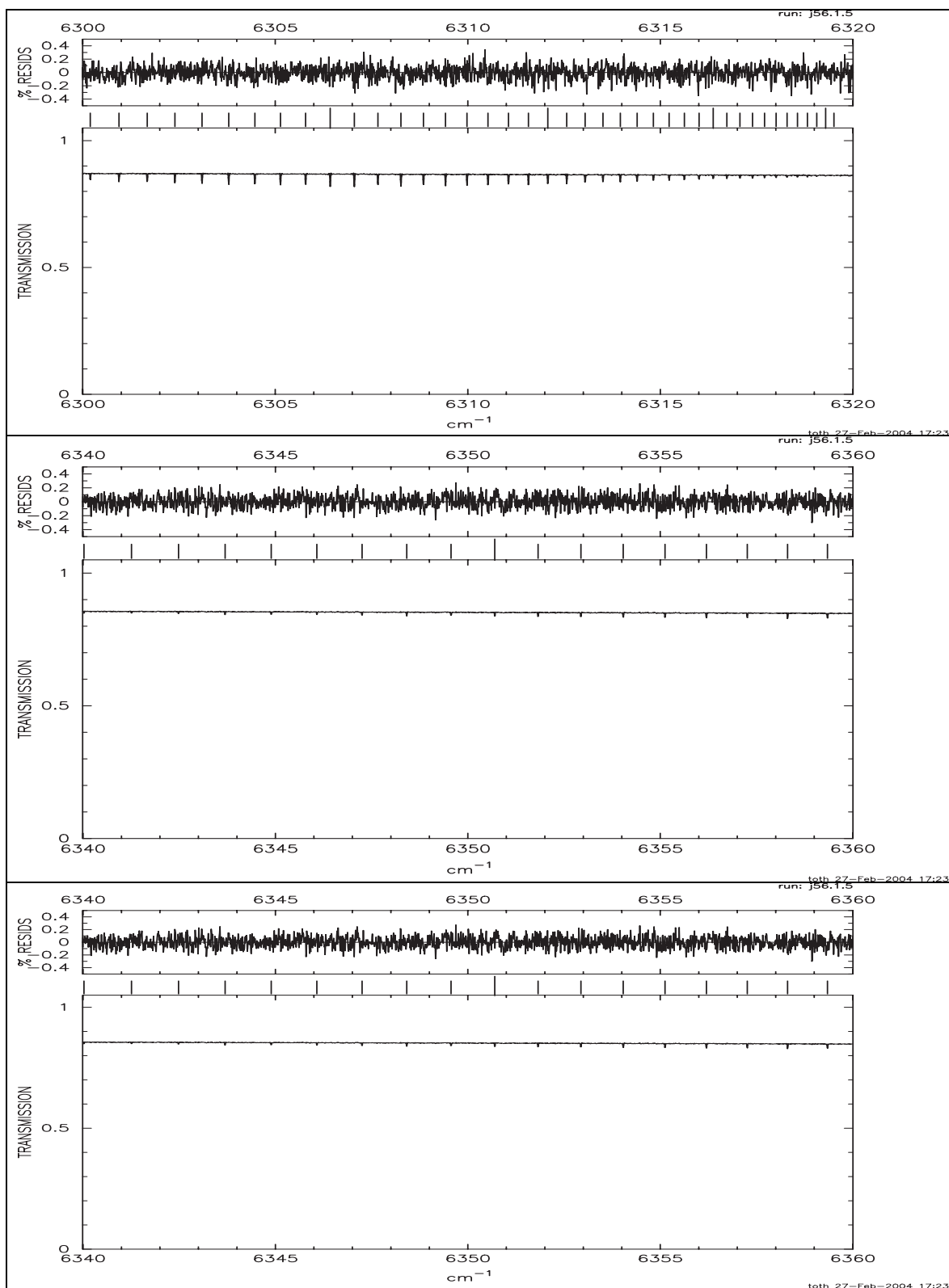


Figure G31. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5.

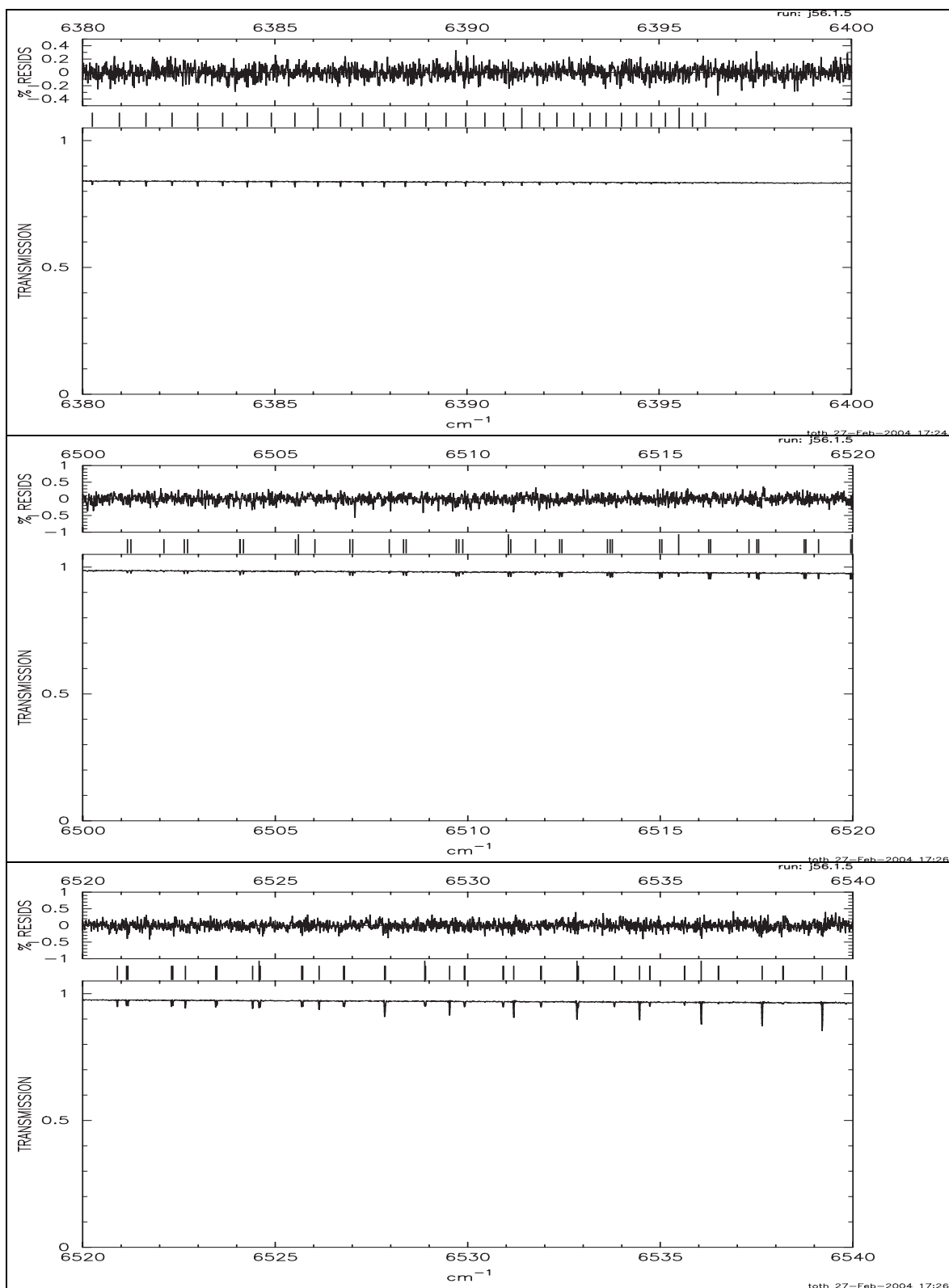


Figure G32. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5.

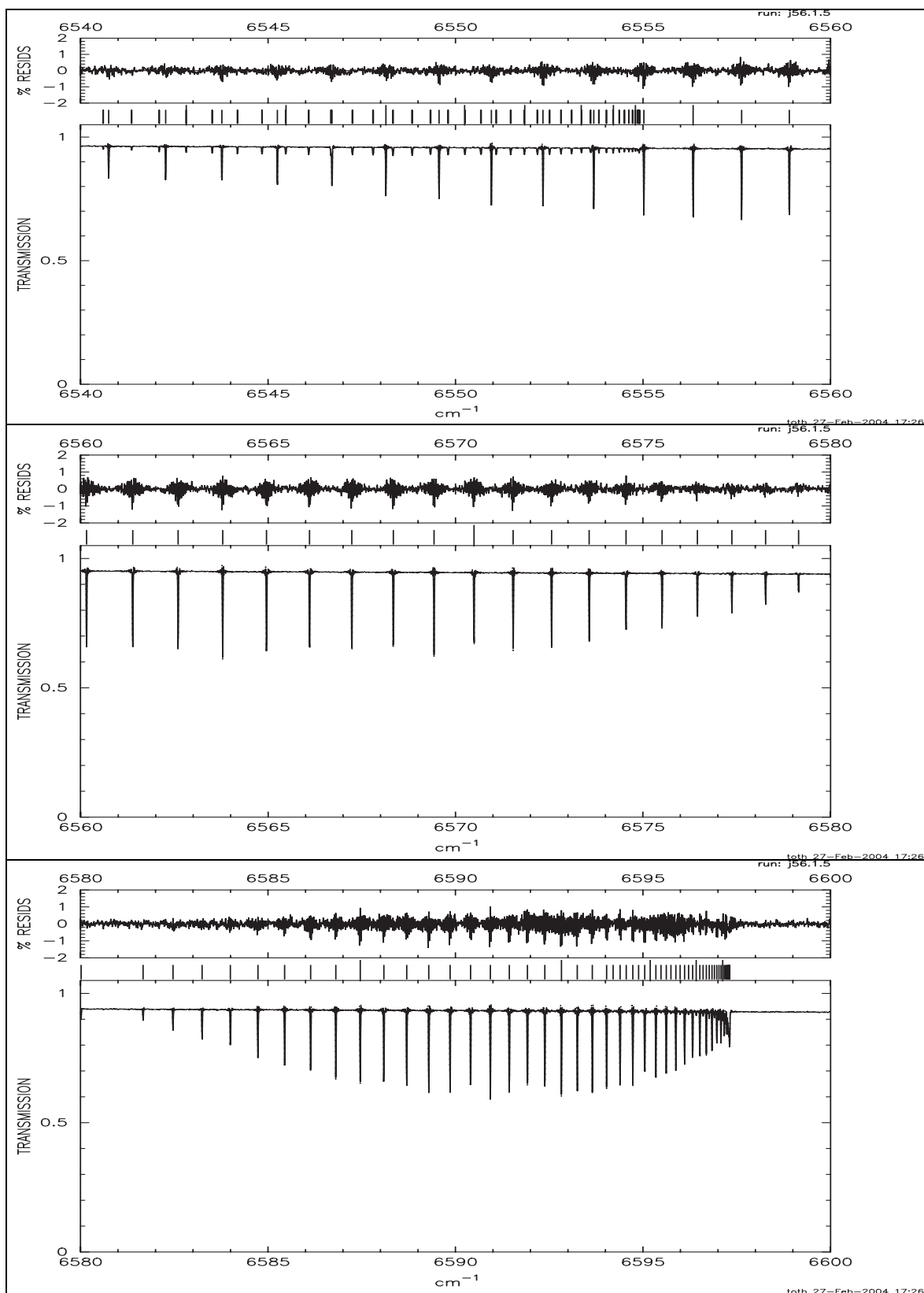


Figure G33. Observed and computed spectra of N<sub>2</sub>O. Observed spectra from run J56.1.5.