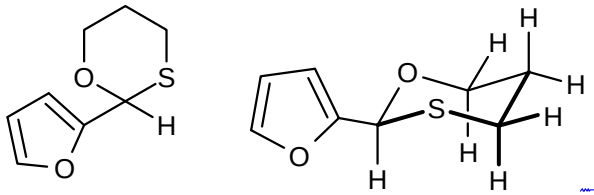
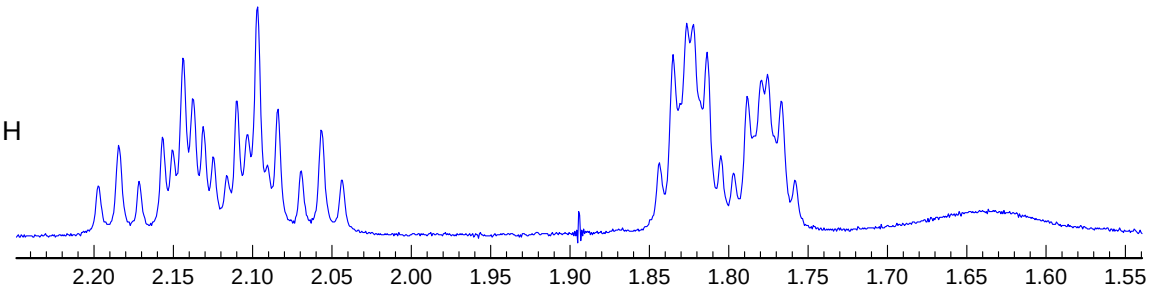
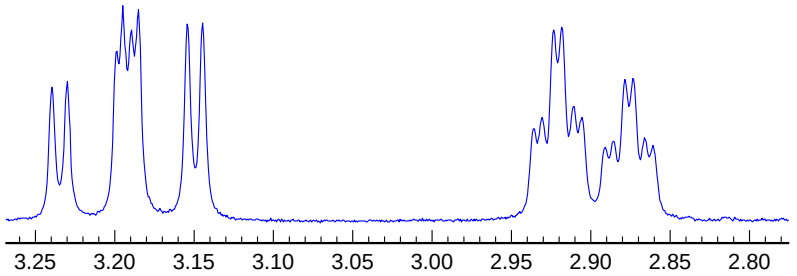
$C_8H_{10}O_2S$

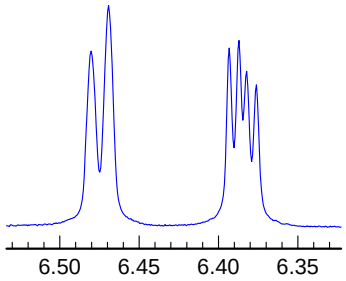
300 MHz ^1H NMR spectrum in $CDCl_3$

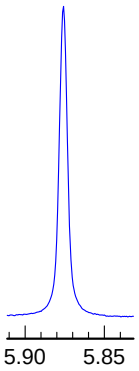
Source: Paul Gold/Amanda Jones/Reich g

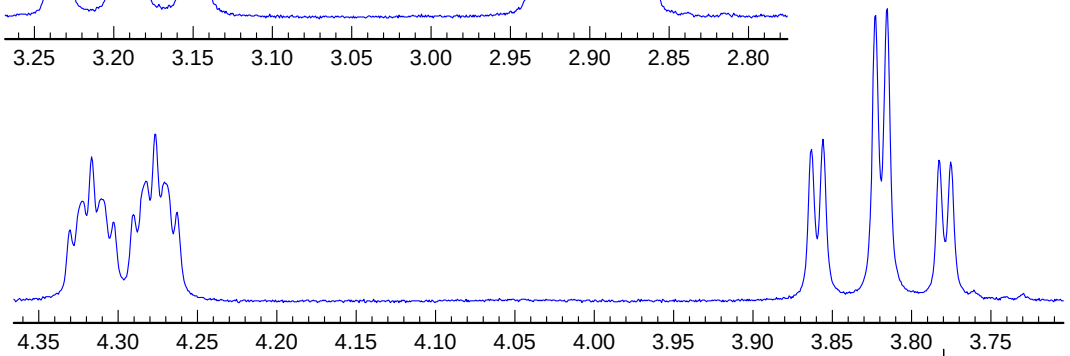


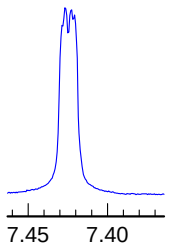






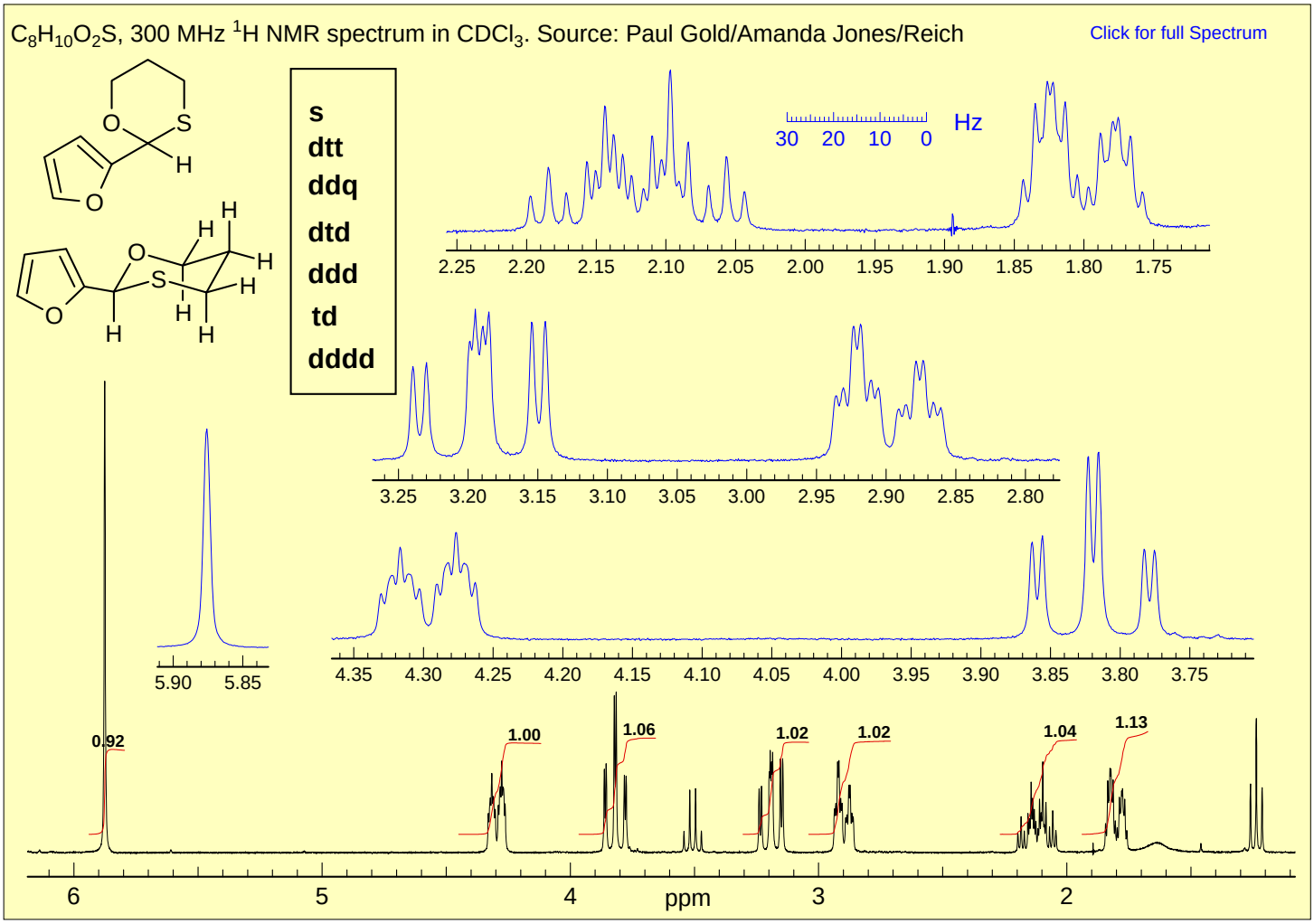






PLT NMR-jones-gold-2-(2-furyl)-1,3-oxathiane-g.plt

Exercise: Assign the seven protons indicated and determine all coupling constants in the spectrum of the furyl-substituted oxathiane ring. All multiplets are basically first order, except for a little leaning. The multiplets present are listed to help out with the analysis.



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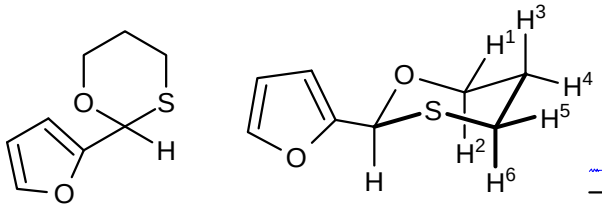
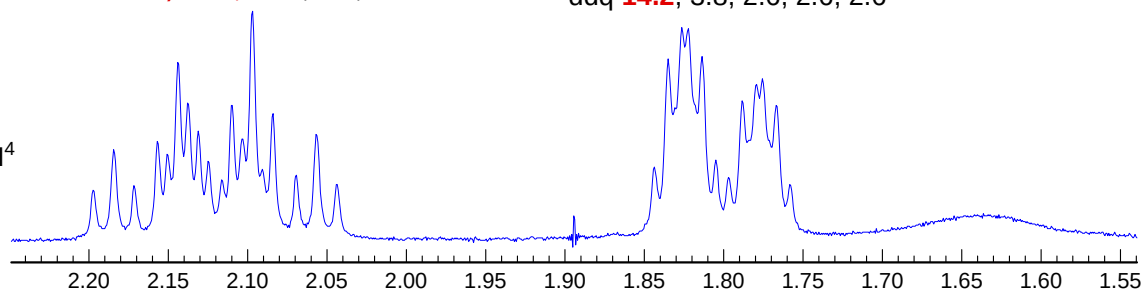


H^3

dtt **14.1, 12.2**, 12.2, 3.9, 3.9

H^4

ddq **14.2**, 3.8, 2.6, 2.6, 2.6



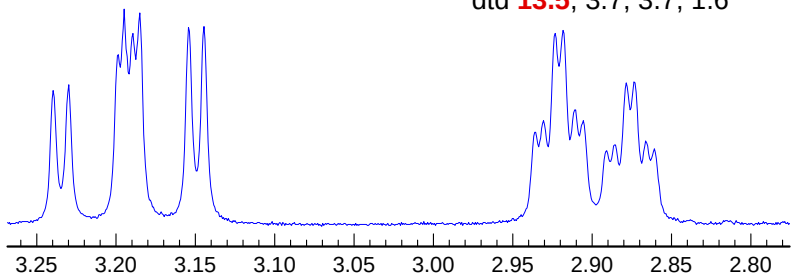
Analysis on next page

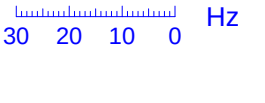
H^6

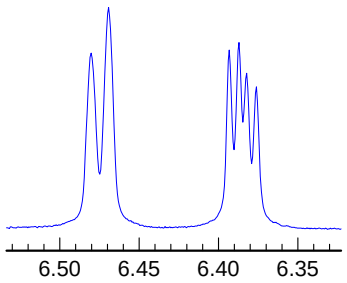
ddd **13.5, 12.3**, 2.9

H^5

dtd **13.5**, 3.7, 3.7, 1.6





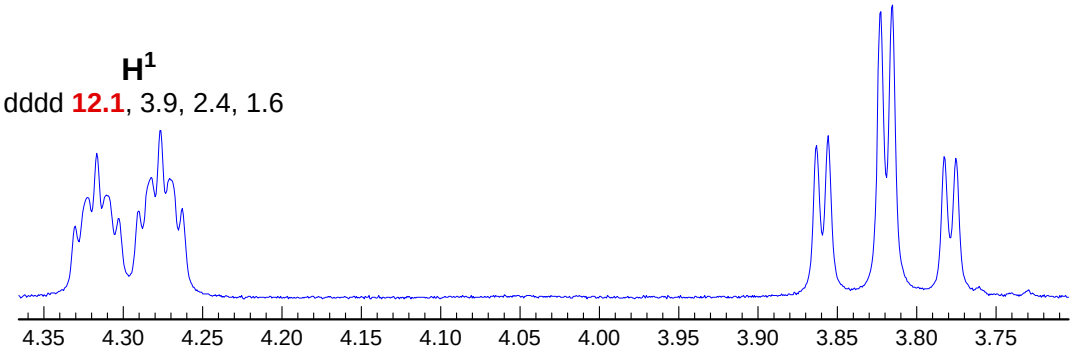


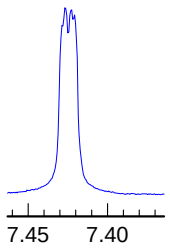
H^2

td **12.1, 12.1**. 2.9

H^1

dddd **12.1**, 3.9, 2.4, 1.6





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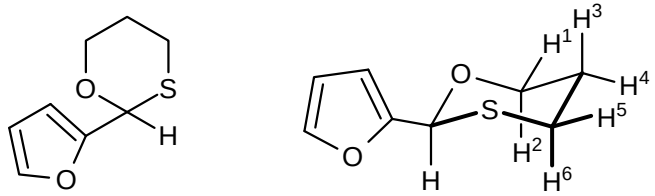
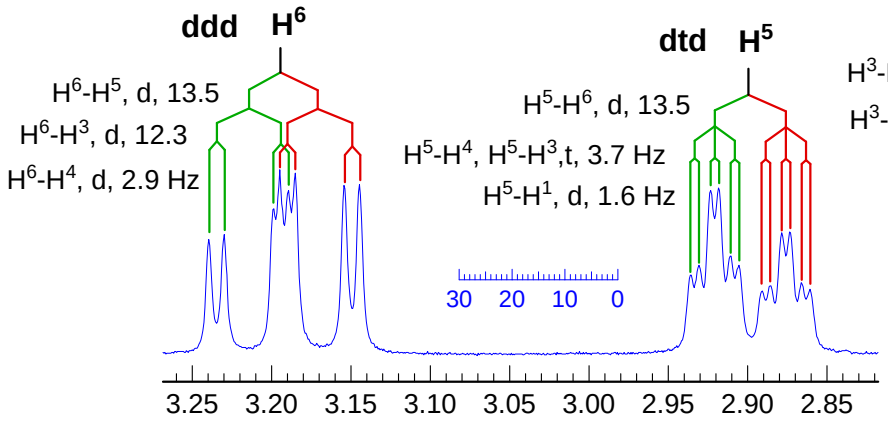
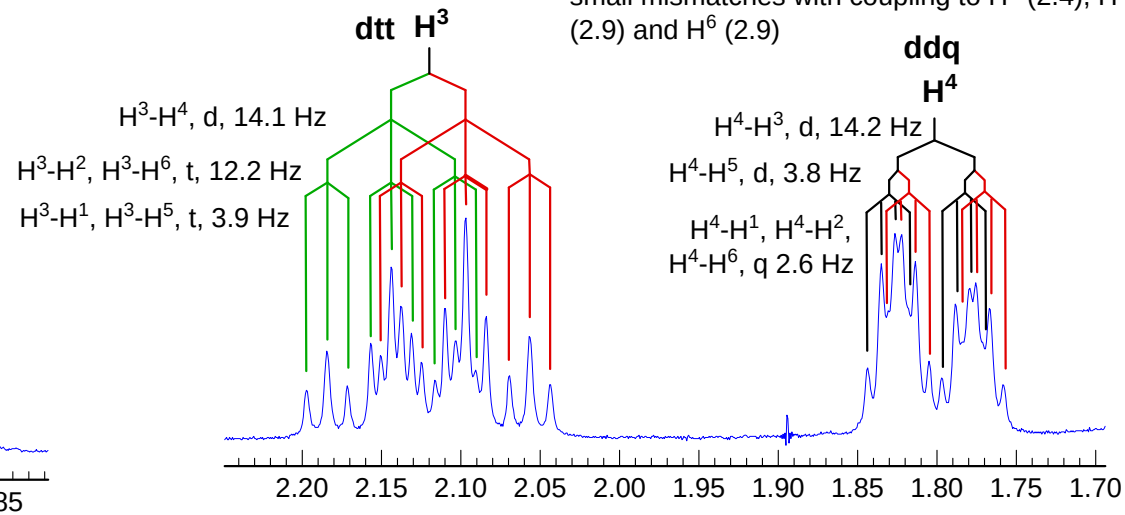
There is no symmetry here, so the higher multiples identified (t, q) are only *apparent triplets* or *apparent quartetes*• *The two or three couplings are certainly slightly different.*

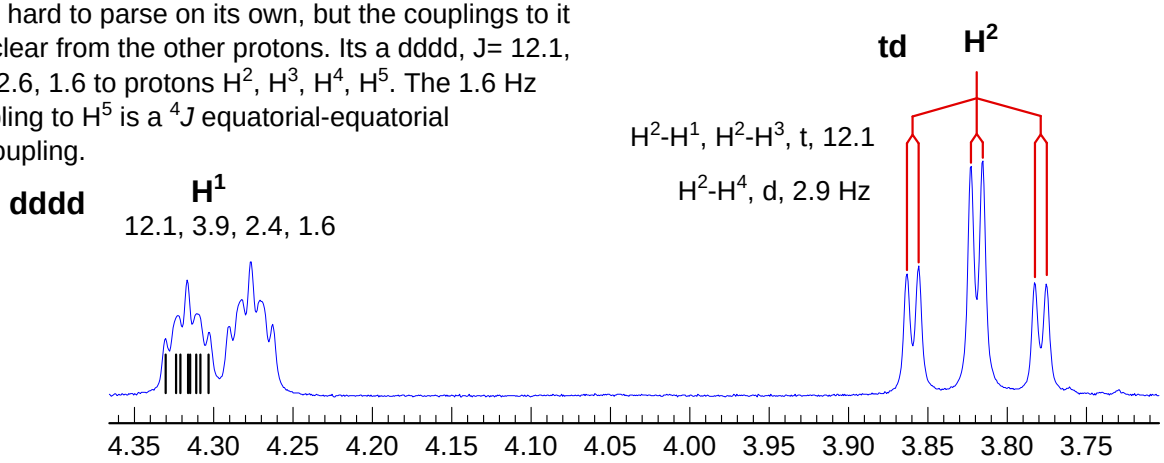


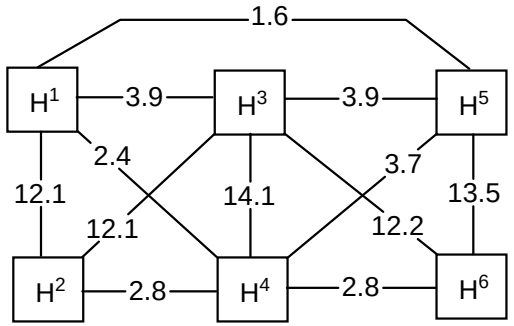


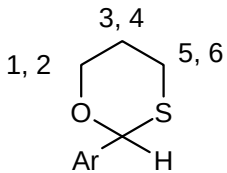
H^4 parses as a ddq, but the three quartet couplings of 2.6 Hz are probably slightly different (really a ddd or dt), as seen from small mismatches with coupling to H^1 (2.4), H^2 (2.9) and H^6 (2.9)



H^1 is hard to parse on its own, but the couplings to it are clear from the other protons. Its a dddd, J= 12.1, 3.9, 2.6, 1.6 to protons H^2, H^3, H^4, H^5. The 1.6 Hz coupling to H^5 is a ^4J equatorial-equatorial W-coupling.







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