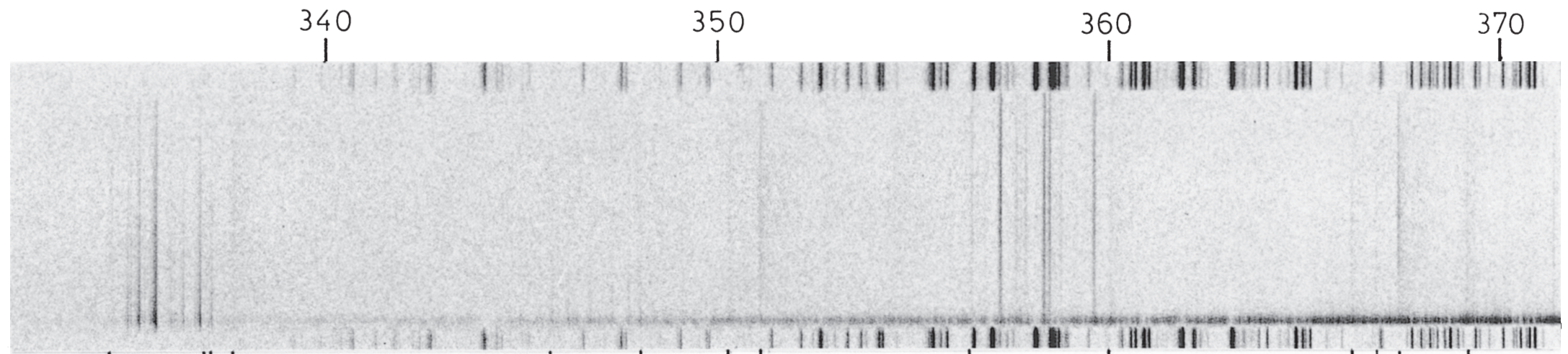
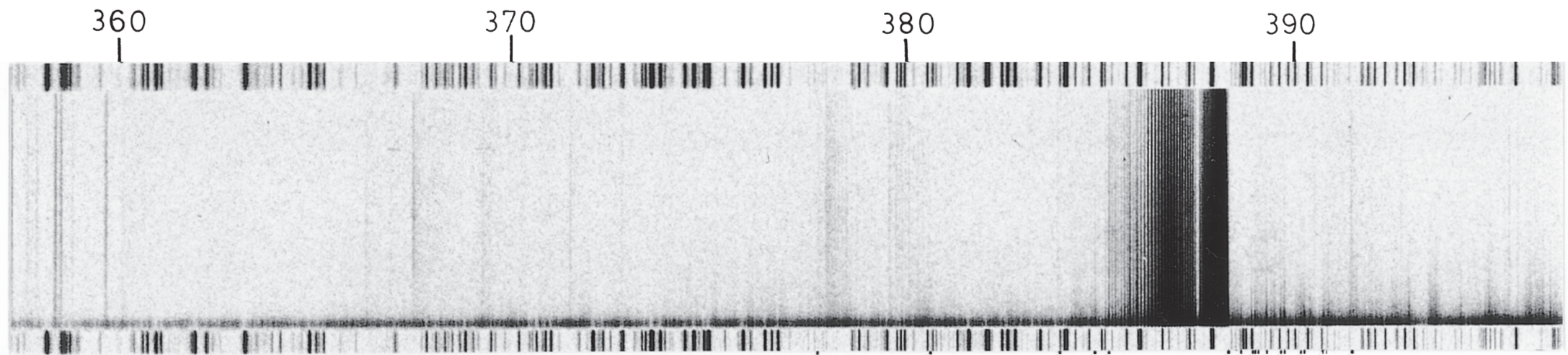


Comet P/Halley (1982 i)  $r = 0.97$  a.u.

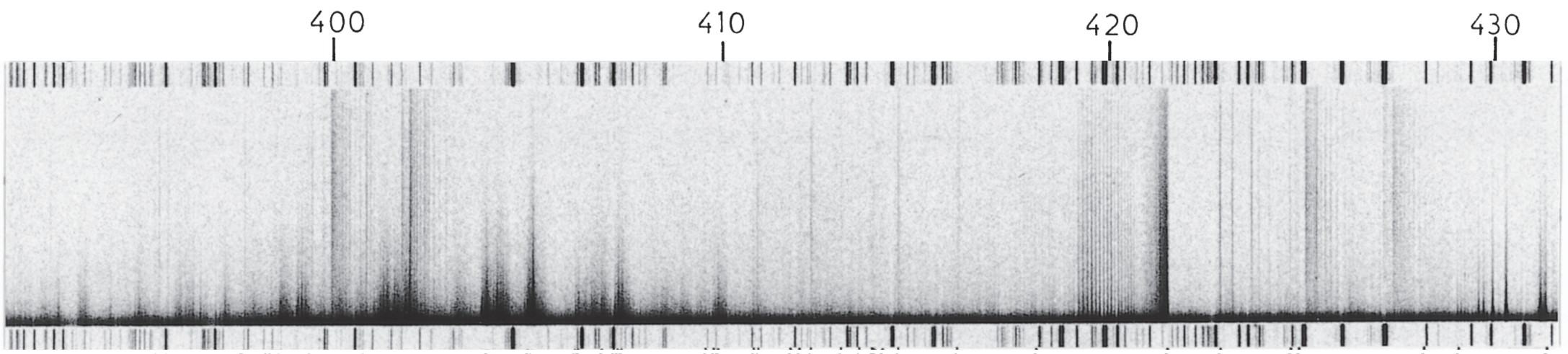


NH  
 $\text{CO}_2^+$  1-0  
 OH(0-1)  
 $\text{CO}_2^+$  0-0  
 OH<sup>+</sup>(0-0)  
 $\text{CO}_2^+$  0-1, 1-2

I



$\text{CO}^+$ (4-0)  
 $\text{CO}_2^+$  0-2, 1-3  
 CN(0-0)  
 CH  
 N<sub>2</sub>  
 B-X



CH<sup>+</sup>(1-0)  
 OH<sup>+</sup>(0-1)  
 $\text{CO}^+$ (3-0)  
 C<sub>3</sub>  
 $\text{CO}^+$ (4-1)  
 $\text{CO}_2^+$  as,rsf  
 CN(0-1)  
 CH<sup>+</sup>(0-0)  
 $\text{CO}^+$ (2-0)  
 CH A-X