^{25}Mg hyperfine $D_2 (P_{3/2})$ 2796 and $D_1 (P_{1/2})$ 2803

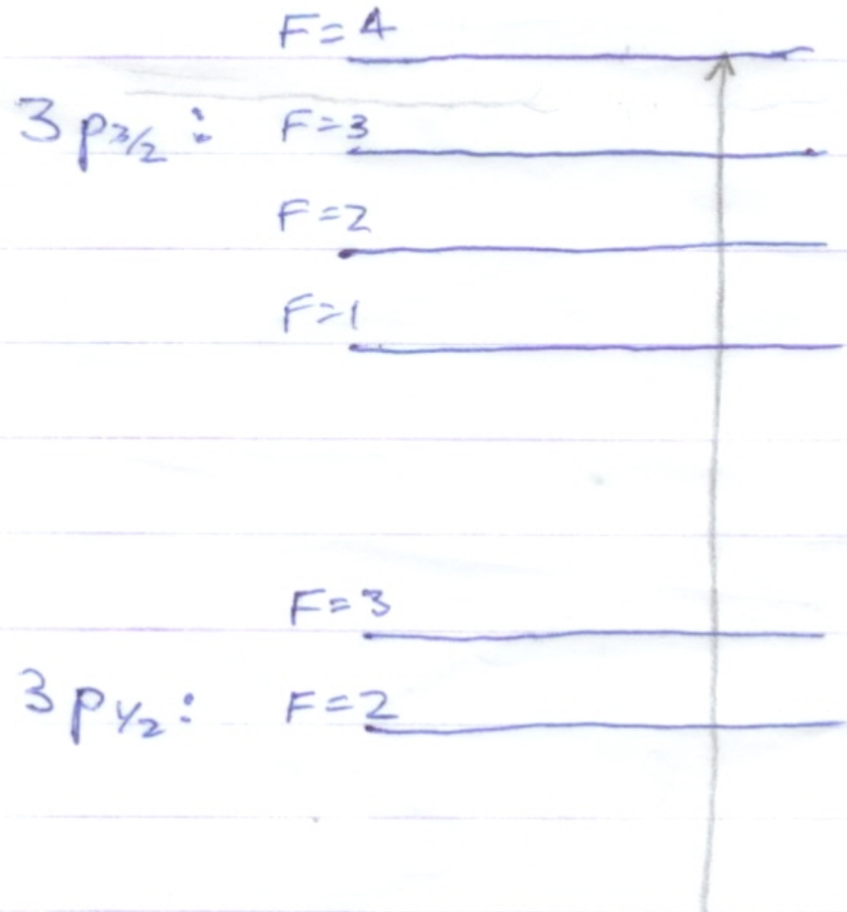
$3S_{1/2} (F=3) - 3P_{3/2} (F=4)$

	A (MHz)	B (MHz)
$3S_{1/2}$	596.2544 (exp)	
$3P_{1/2}$	101.7 – 103.4	
$3P_{3/2}$	18.89 – 19.29	22.91
	[51] Sur et al	[52] Johnson et al

$$\Delta E_{M1} = \frac{A}{2} \cdot \left[F(F+1) - I(I+1) - J(J+1) \right] = \frac{A}{2} \cdot K$$

$$\Delta E_{E2} = \frac{B}{2} \cdot \left[\frac{3K(K+1) - 4I(I+1)J(J+1)}{2I(2I-1)2J(2J-1)} \right] = \frac{B}{2} \cdot C$$

For ~~^{25}Mg~~ $I = 5/2$



	K	C	ΔE (MHz)
$3P_{3/2}$: F=4	$15/2$	$1/2$	76.565
F=3	$-1/2$	$-11/10$	−17.323
F=2	$-13/2$	$-1/5$	−63.6835
F=1	$-21/2$	$7/5$	−83.1355
$3P_{1/2}$: F=3	$5/2$		127.125
F=2	$-7/2$		−177.975
$3S_{1/2}$: F=3	$3/2$		745.318
F=2	$-7/2$		−1043.45

$3S_{1/2} (F=3) - 3P_{3/2} (F=4)$

$= 1072\,082\,934 + \underset{(1.S.)}{1621} + 76.6 - 745.3$

$= 1072\,083\,886\ MH_z.$