

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)		Refs.
0.110	$\frac{1}{2}^-$	0	$\frac{1}{2}^+$	100		
0.197	$\frac{5}{2}^+$	0	$\frac{1}{2}^+$	100		
		0.110	$\frac{1}{2}^-$	< 0.06		(1970CO22)
1.35 ^a	$\frac{5}{2}^-$	0	$\frac{1}{2}^+$		$ M ^2 = 7.6 \pm 1.3$	(1963LI01, 1969AL15)
				< 3	W.u. (E3)	C
		0.110	$\frac{1}{2}^-$	96.8 ± 1^b		(1969PO03)
				96.4 ± 3.0		C
		0.197	$\frac{5}{2}^+$	3.2 ± 1		(1969PO03)
				3.6 ± 1.0		C
1.46 ^{a,b}	$\frac{3}{2}^-$	0	$\frac{1}{2}^+$	22.5 ± 2		(1969PO03)
				21 ± 1		(1970LA02)
				20.0 ± 1		(1971HA30)
		0.110	$\frac{1}{2}^-$	66.6 ± 3		(1969PO03)
				68 ± 3		(1970LA02)
				69.7 ± 1		(1971HA30)
		0.197	$\frac{5}{2}^+$	10.9 ± 2		(1969PO03)
				10.2 ± 1		(1971HA30)
				11 ± 0.5		(1970LA02)
1.55 ^{a,b}	$\frac{3}{2}^+$	0	$\frac{1}{2}^+$	2.0 ± 0.7		(1969PO03)
				2.4 ± 0.5		(1966OL01)
					$ M ^2 = 6.8 \pm 0.7$	(1969AL15)
					W.u. (E2)	
		0.110	$\frac{1}{2}^-$	4.6 ± 0.5		(1959JO26)

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)		Refs.							
2.78	$\frac{9}{2}^+$	0.197	$\frac{5}{2}^+$	5.3 ± 1	$ M ^2 = 7.7 \pm 1.5$ W.u.	(1969PO03)							
				5.2 ± 0.7		(1966OL01)							
				(95.4 ± 0.5)		(1954JO21)							
				92.7 ± 1		(1969PO03)							
		1.35	$\frac{5}{2}^-$	0.197		$\frac{5}{2}^+$	92.4 ± 0.9	(1966OL01)					
							≤ 4	(1954JO21)					
		3.91 ^c	$\frac{3}{2}^{(+)}$	0		$\frac{1}{2}^+$	100	$ M ^2 = 7.7 \pm 1.5$ W.u.	(1966TH02, 1968SP01, 1969JA09, 1970CO22)				
							62		(1969WO1F)				
							79 ± 3		(1965AL20)				
							47 ± 5		C				
							0.110		$\frac{1}{2}^-$	0.110	$\frac{1}{2}^-$	12	(1969WO1F)
												< 10	(1965AL20)
							0.197		$\frac{5}{2}^+$	0.197	$\frac{5}{2}^+$	18 ± 4	C
												10	(1969WO1F)
1.35	$\frac{5}{2}^-$				1.35		$\frac{5}{2}^-$		< 2	$ M ^2 = 7.7 \pm 1.5$ W.u.	(1965AL20)		
									16 ± 4		C		
		4	(1969WO1F)										
		< 4	(1965AL20), C										
		1.46	$\frac{3}{2}^-$	1.46		$\frac{3}{2}^-$		3	(1969WO1F)				
								< 4	(1965AL20), C				
1.55	$\frac{3}{2}^+$	1.55	$\frac{3}{2}^+$	16	$ M ^2 = 7.7 \pm 1.5$ W.u.	(1969WO1F)							
				21 ± 3		(1965AL20)							

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)	Refs.	
4.00 ^c	$\frac{7}{2}^-$			18 ± 4	C	
		2.78	$\frac{9}{2}^+$	< 2	(1965AL20)	
		0.110	$\frac{1}{2}^+$	(22)	(1965AL20)	
		0.197	$\frac{5}{2}^+$	18 ± 4	C	
		1.35	$\frac{5}{2}^-$	78	(1965AL20)	
				85	(1969WO1F)	
				90	(1970AI01)	
				70 ± 4	C	
		1.46	$\frac{3}{2}^-$	15	(1969WO1F)	
				10	(1970AI01)	
4.03	$\frac{9}{2}^-$ $\frac{7}{2}^+$	1.35	$\frac{5}{2}^-$	12 ± 2	C	
4.38		0	$\frac{1}{2}^+$	100	(1966TH02, 1970AI01)	
		0.110	$\frac{1}{2}^-$	< 5	(1966OL01)	
		0.197	$\frac{5}{2}^+$	< 2	(1966OL01)	
				85 ± 5	(1966TH02)	
				82 ± 7	(1966OL01)	
			1.35 + 1.46		≤ 2	(1966OL01)
			1.55	$\frac{3}{2}^+$	< 4	(1966OL01)
			2.78	$\frac{9}{2}^+$	15 ± 5	(1966TH02)
					18 ± 7	(1966OL01)
4.555 ^c	$\frac{5}{2}^+$	0	$\frac{1}{2}^+$	< 5	C	
		0.110	$\frac{1}{2}^-$	< 5	C	
		0.197	$\frac{5}{2}^+$	69 ± 7	C	

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)		Refs.
4.558 ^c	$\frac{3}{2}^-$	1.35	$\frac{5}{2}^-$	5 ± 3		C
		1.46	$\frac{3}{2}^-$	8 ± 3		C
		1.55	$\frac{3}{2}^+$	18 ± 4		C
		0	$\frac{1}{2}^+$	36 ± 4		C
		0.110	$\frac{1}{2}^-$	45 ± 5		C
		0.197	$\frac{5}{2}^+$	69 ± 7		C
		1.35	$\frac{5}{2}^-$	5 ± 3		C
		1.46	$\frac{3}{2}^-$	< 4		C
4.65	$\frac{13}{2}^+$	1.55	$\frac{3}{2}^+$	6 ± 3	$ M ^2 = 5.5 \pm 1.8$ W.u.	C
		2.78	$\frac{9}{2}^+$	100		(1969BH01, 1969JA09, 1970AI01)
4.68 ^{c,d,m}	$\frac{5}{2}^-$	0.197	$\frac{5}{2}^+$	6	$\Gamma_\gamma = \Gamma = 0.95 \pm 0.05$	(1969WO1F, 1970AI01, 1972RO01)
			6 ± 1	(1972RO01)		
			4 ± 2	C		
		1.35	$\frac{5}{2}^-$	60		(1969WO1F)
			63	(1970AI01)		
			63 ± 6	(1972RO01)		
			64 ± 5	C		
		1.46	$\frac{3}{2}^-$	34		(1969WO1F)
				30		(1970AI01)
				31 ± 3		(1972RO01)
2.78	$\frac{9}{2}^+$	32 ± 3	C			
		< 1	(1970AI01)			

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)	Refs.
5.11 ^d	$\frac{5}{2}^{(-)}$	0.197	$\frac{5}{2}^{+}$	< 2	(1972RO01)
		1.46	$\frac{3}{2}^{-}$	80	(1970AI01)
		1.46	$\frac{3}{2}^{-}$	20	(1970AI01)
5.34 ^{d,e}	$\frac{1}{2}^f$	0	$\frac{1}{2}^{+}$	37	(1970AI01)
		0.110	$\frac{1}{2}^{-}$	42	(1970AI01)
		0.197	$\frac{5}{2}^{+}$	< 2	(1970AI01)
		1.46	$\frac{3}{2}^{-}$	20	(1970AI01)
5.43 ^d	$\frac{7}{2}^{-}$	1.35	$\frac{5}{2}^{-}$	70	(1970AI01)
		1.46	$\frac{3}{2}^{-}$	13	(1970AI01)
		4.00	$\frac{7}{2}^{-}$	10	(1970AI01)
		4.03	$\frac{9}{2}^{-}$	6	(1970AI01)
		0.197	$\frac{5}{2}^{+}$	4	(1971DI18)
5.46 ^{d,e}	$\frac{7}{2}^{-}$	1.35	$\frac{5}{2}^{-}$	32	(1971DI18)
		1.55	$\frac{3}{2}^{+}$	5	(1971DI18)
		2.78	$\frac{9}{2}^{+}$	59	(1971DI18)
		0.110	$\frac{1}{2}^{-}$	25 ⁿ	(1970AI01)
5.50 ^d	$\frac{3}{2}^{+}$	0.197	$\frac{5}{2}^{+}$	49	(1970AI01)
		1.35	$\frac{5}{2}^{-}$	16	(1970AI01)
		1.55	$\frac{3}{2}^{+}$	11	(1970AI01)
		0	$\frac{1}{2}^{+}$	7	(1970AI01)
5.54	$\frac{5}{2}^{+}$	0.197	$\frac{5}{2}^{+}$	47	(1970AI01)
		1.46	$\frac{3}{2}^{-}$	45	(1970AI01)
5.63		0.197	$\frac{5}{2}^{+}$	33 ⁿ	(1970AI01)

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)	Refs.
5.94	$\frac{1}{2}^{(+)}$	1.35	$\frac{5}{2}^-$	66	(1970AI01)
		0	$\frac{1}{2}^+$	15	(1970AI01)
		0.110	$\frac{1}{2}^-$	38	(1970AI01)
		1.46	$\frac{3}{2}^-$	38	(1970AI01)
		3.91	$\frac{3}{2}^{(+)}$	9	(1970AI01)
6.08	$(\frac{7}{2}^+)$	0.197	$\frac{5}{2}^+$	40 ⁿ	(1970AI01)
		1.35	$\frac{5}{2}^-$	20	(1970AI01)
		2.78	$\frac{9}{2}^+$	40	(1970AI01)
6.09	$(\frac{3}{2}^-)$	0	$\frac{1}{2}^+$	25 ⁿ	(1970AI01)
		0.110	$\frac{1}{2}^-$	62	(1970AI01)
		0.197	$\frac{5}{2}^+$	14	(1970AI01)
6.17	$\frac{7}{2}^{(-)}$	0.197	$\frac{5}{2}^+$	32 ⁿ	(1970AI01)
		1.35	$\frac{5}{2}^-$	68	(1970AI01)
6.29	$\frac{5}{2}^+$	1.35	$\frac{5}{2}^-$	31 ⁿ	(1970AI01)
		1.46	$\frac{3}{2}^-$	47	(1970AI01)
		1.55	$\frac{3}{2}^+$	22	(1970AI01)
6.33	$\frac{7}{2}^+$	0.197	$\frac{5}{2}^+$	84 ⁿ	(1970AI01)
		1.35	$\frac{5}{2}^-$	16	(1970AI01)
6.497 ^d	$\frac{3}{2}^{(+)}$	0	$\frac{1}{2}^+$	38	(1970AI01)
		0.110	$\frac{1}{2}^-$	14	(1970AI01)
		0.197	$\frac{5}{2}^+$	9	(1970AI01)
		1.35	$\frac{5}{2}^-$	14	(1970AI01)
		1.46	$\frac{3}{2}^-$	25	(1969AI01, 1970AI01)

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)	Refs.
6.499 ^d	$\frac{11}{2}^+$	2.78	$\frac{9}{2}^+$	55	(1969AI01)
		4.00	$\frac{7}{2}^-$	< 3	(1969AI01)
		4.03	$\frac{9}{2}^-$	< 3	(1969AI01)
		4.39	$\frac{7}{2}^+$	< 3	(1969AI01)
		4.65	$\frac{13}{2}^+$	45	(1969AI01, 1970AI01)
		5.47	$\frac{7}{2}^+$	< 2	(1969AI01)
		6.53	$\frac{3}{2}^+$	0	$\frac{1}{2}^+$
0.110	$\frac{1}{2}^-$	59		B	
4.56	$\frac{5}{2}^+$	12		B	
6.55	$\frac{7}{2}$	0.197	$\frac{5}{2}^+$	20	B
		1.35	$\frac{5}{2}^-$	55	B
		2.78	$\frac{9}{2}^+$	25	B
		6.59	$\frac{9}{2}^+$	0.197	$\frac{5}{2}^+$
2.78	$\frac{9}{2}^+$	63		(1971DI18)	
4.00	$\frac{7}{2}^-$	< 4		(1971DI18)	
4.03	$\frac{9}{2}^-$	< 2		(1971DI18)	
4.39	$\frac{7}{2}^+$	24		(1971DI18)	
4.56	$\frac{5}{2}^+$	< 2		(1971DI18)	
4.65	$\frac{13}{2}^+$	< 2		(1971DI18)	
5.43	$\frac{7}{2}^-$	< 3		(1971DI18)	
5.46	$\frac{7}{2}^+$	< 8		(1971DI18)	
6.79	$\frac{3}{2}^-$	0		$\frac{1}{2}^+$	16
		0.110	$\frac{1}{2}^-$	40	B

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)		Refs.		
∞	6.93	0.197	$\frac{5}{2}^+$	13	$\Gamma_\gamma/\Gamma \lesssim 0.05$	B		
		1.35	$\frac{5}{2}^-$	5		B		
		1.46	$\frac{3}{2}^-$	26		B		
		0.197	$\frac{5}{2}^+$	73		B		
		1.35	$\frac{5}{2}^-$	5		B		
		2.78	$\frac{9}{2}^+$	2.4		B		
		4.00	$\frac{7}{2}^-$	1.3		B		
		4.03	$\frac{9}{2}^-$	1.3		B		
		7.17	$\frac{11}{2}^-, (\frac{7}{2}^-)$	4.00		$\frac{7}{2}^-$	6	B
				4.03		$\frac{9}{2}^-$	94	B
	7.54 ^{d,g}	$\frac{5}{2}^+; T = \frac{3}{2}$	0	$\frac{1}{2}^+$		< 1	(1969AI02)	
			0.197	$\frac{5}{2}^+$		30	(1969AI02)	
	7.66 ^{d,g}	$\frac{3}{2}^+; T = \frac{3}{2}$	1.55	$\frac{3}{2}^+$		42	A	
			3.91	$\frac{3}{2}^+(+)$		< 1	(1969AI02)	
			4.39	$\frac{7}{2}^+$		28	(1969AI02)	
			4.56	$\frac{3}{2}^+(+)$		< 1	(1969AI02)	
			5.34	$\frac{1}{2}^-$		< 1	(1969AI02)	
			5.47	$\frac{7}{2}^+$		< 1	(1969AI02)	
			0	$\frac{1}{2}^+$		43	$\Gamma_\gamma = 4.7 \text{ eV}$ (1963BA19, 1969AI02)	
			0.197	$\frac{5}{2}^+$		17	$\Gamma_\gamma/\Gamma = 0.65 \pm 0.10$ A	
1.55			$\frac{3}{2}^+$	40	(1969AI02)			

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)	Refs.		
7.93	$(\frac{7^+}{2}, \frac{9}{2})$	3.91	$\frac{3}{2}^{(+)}$	< 3	(1969AI02)		
		4.39	$\frac{7}{2}^+$	< 7	(1969AI02)		
		4.56	$\frac{3}{2}^{(+)}$	< 5	(1969AI02)		
		5.34	$\frac{1}{2}$	< 10	(1969AI02)		
		5.47	$\frac{7}{2}^+$	< 10	(1969AI02)		
		0.197	$\frac{5}{2}^+$	4	(1971DI18)		
		2.78	$\frac{9}{2}^+$	96	(1971DI18)		
		7.94 ^d	$\frac{11}{2}^+$	2.78	$\frac{9}{2}^+$	11	(1970RO1C)
						10	(1971DI18)
				4.00	$\frac{7}{2}^-$	< 7	(1971DI18)
4.03	$\frac{9}{2}^-$			< 7	(1971DI18)		
4.39	$\frac{7}{2}^+$			< 7	(1971DI18)		
4.65	$\frac{13}{2}^+$			89	(1970RO1C)		
				90	(1971DI18)		
5.43	$\frac{7}{2}^-$			< 9	(1971DI18)		
5.46	$\frac{7}{2}^+$			< 10	(1971DI18)		
6.50	$\frac{11}{2}^+$			< 7	(1971DI18)		
6.59	$\frac{9}{2}^+$			< 7	(1971DI18)		
8.29	$(\frac{13}{2}^-)$			4.03	$\frac{9}{2}^-$	100	C
8.59	$\frac{3}{2}$	0	$\frac{1}{2}^+$	51 ± 4	(1962NE03)		
		0.110	$\frac{1}{2}^-$	9 ± 3	(1962NE03)		
		0.197	$\frac{5}{2}^+$	40 ± 3	(1965AL20)		
8.80 ^h	$\frac{1}{2}^+$	0	$\frac{1}{2}^+$	< 10	(1965AL20)		

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)		Refs.
		0.110	$\frac{1}{2}^-$	42 ± 4		(1965AL20)
		0.197	$\frac{5}{2}^+$	< 5		(1965AL20)
		1.35	$\frac{5}{2}^-$	< 5		(1965AL20)
		1.46	$\frac{3}{2}^-$	21 ± 5		(1965AL20)
		1.55	$\frac{3}{2}^+$	19 ± 5		(1965AL20)
		2.78	$\frac{9}{2}^+$	< 1		(1965AL20)
		3.91	$\frac{3}{2}^{(+)}$	18 ± 2		(1965AL20)
E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)	Γ_γ (meV)	Refs.
8.94	$(\frac{11}{2}^-)$	2.78	$\frac{9}{2}^+$	36 ± 10	54 ± 17	C
		4.00	$\frac{7}{2}^-$	19 ± 7	29 ± 12	C
		4.03	$\frac{9}{2}^-$	45 ± 13	68 ± 17	C
9.09 ⁱ	$\frac{7}{2}^+; T = \frac{3}{2}$	0.110	$\frac{1}{2}^-$	(< 0.5)		(1965AL20)
		0.197	$\frac{5}{2}^+$	11 ± 2		(1965AL20)
		1.35	$\frac{5}{2}^-$	4 ± 1		(1965AL20)
		2.78	$\frac{9}{2}^+$	64 ± 4^j		(1965AL20)
		4.00	$\frac{7}{2}^-$	8 ± 2		(1965AL20)
		5.43	$\frac{7}{2}^-$	(8 ± 2)		(1965AL20)
		6.08	$(\frac{7}{2}^+)$	(5 ± 2)		(1962NE03)
9.32	$\frac{1}{2}^+$	0	$\frac{1}{2}^+$	86 ± 4		(1962NE03)
		0.110	$\frac{1}{2}^-$	4 ± 2		(1962NE03)
		0.197	$\frac{5}{2}^+$	10 ± 2		(1962NE03)
9.67 ^{,h,k}	$\frac{3}{2}^+$	0	$\frac{1}{2}^+$	25		(1969WO1F)
		0.110	$\frac{1}{2}^-$	21		(1969WO1F)

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)		Refs.
9.82 ^{h,l}	$\frac{5}{2}^-$	0.197	$\frac{5}{2}^+$	12		(1969WO1F)
		1.35	$\frac{5}{2}^-$	8		(1969WO1F)
		1.46	$\frac{3}{2}^-$	6		(1969WO1F)
		1.55	$\frac{3}{2}^+$	11		(1969WO1F)
		3.91	$\frac{3}{2}^{(+)}$	6		(1969WO1F)
		4.56	$\frac{5}{2}^+$	5		(1969WO1F)
		7.54	$\frac{5}{2}^+$	3		(1969WO1F)
		7.66	$\frac{3}{2}^+$	3		(1969WO1F)
		0.197	$\frac{5}{2}^+$	41		(1969WO1F)
		1.35	$\frac{5}{2}^-$	4		(1969WO1F)
		1.46	$\frac{3}{2}^-$	8		(1969WO1F)
		1.55	$\frac{3}{2}^+$	30		(1969WO1F)
		4.00	$\frac{7}{2}^-$	2		(1969WO1F)
		4.68	$\frac{5}{2}^-$	5		(1969WO1F)
		5.43	$\frac{7}{2}^-$	10		(1969WO1F)
E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)	$ M ^2 \times 10^{-3}$ W.u.	Refs.
10.136	$\frac{3}{2}^-$	0	$\frac{1}{2}^+$	84 ± 3		(1962NE03)
				64	4.9	A
		0.110	$\frac{1}{2}^-$	4 ± 2		(1962NE03)
					< 3	A
		0.197	$\frac{5}{2}^+$	12 ± 2		(1962NE03)
				29	2.4	A
		1.35	$\frac{5}{2}^-$		< 2	A

Table 19.9 from (1972AJ02): Radiative transitions in $^{19}\text{F}^\dagger$ (continued)

E_i (MeV)	J_i^π	E_f (MeV)	J_f^π	Branching ratio (%)		Refs.
		1.46	$\frac{3}{2}^-$	2	4.6	A
		1.55	$\frac{3}{2}^+$	2	0.20	A
		3.91	$\frac{3}{2}^{(+)}$	4	0.57	A

A: I.F. Wright and M.R. Wormald, private communication.

B: W.R. Dixon and R.S. Storey, private communication.

C: K. Bharuth-Ram, K.P. Jackson, N.A. Jelley, P.G. Lawson and K.W. Allen, private communication.

$^\dagger E_x = 1345.4 \pm 0.6, 1458.6 \pm 0.6, 1553.5 \pm 0.6, 2779.8 \pm 0.6, 3907.1 \pm 1.0, 3998.5 \pm 0.8, 4032.5 \pm 1.0, 4377.7 \pm 1.0, 4557.5 \pm 1.0$ and 4682.5 ± 1.0 keV (K.

Bharuth-Ram, K.P. Jackson, N.A. Jelley, P.G. Lawson and K.W. Allen, private communication.

^a For partial widths, see (1969PO03).

^b See also (1968SP01, 1969WO1F).

^c See also (1966TH02, 1969WO1F).

^d See also Table 19.7.

^e See also (1967TO1C) and (1970AI01).

^f See, however, (1970SC25).

^g See also (1969WO1F).

^h See also (1962NE03).

ⁱ See also (1959BU05, 1963HU07).

^j $\Gamma_\gamma = 0.84 \pm 0.19$ eV. The total $\Gamma_\gamma(9.07) = 1.31 \pm 0.31$ eV.

^k $\Gamma_p\Gamma_\gamma/\Gamma = 1.3 \pm 0.3$ eV (1969WO1F).

^l $\Gamma_p\Gamma_\gamma/\Gamma = 1.7 \pm 0.3$ eV (1969WO1F).

^m The branching ratios to $^{19}\text{F}^*(0, 0.11, 1.55)$ are $< 5, < 1.5$ and $< 5\%$ respectively (1972RO01).

ⁿ Values shown are no true branching ratios but are relative intensities observed at 90° . I am indebted to W.R. Dixon and R.S. Storey for calling this to my attention.