i	f_i in $P_{i\,j}Y_{k\,l}$ basis	f_i
1	$8/9P_{00}Y_{00} + 16/9/\sqrt{5}P_{00}Y_{20} + 16/9P_{20}Y_{00} + 32/(9\sqrt{5})P_{20}Y_{20}$	$4\cos^2\theta_1\cos^2\theta_2$
2	$8/9P_{00}Y_{00} - 8/9P_{00}Y_{20} - 8/9\sqrt{5}P_{20}Y_{00} + 8/(9\sqrt{5})P_{20}Y_{20} + (2/9)\sqrt{12/5}P_{22}Y_{22}$	$\sin^2\theta_1\sin^2\theta_2(1+\cos 2\Phi)$
3	$8/9P_{00}Y_{00} - 8/9P_{00}Y_{20} - 8/9\sqrt{5}P_{20}Y_{00} + 8/(9\sqrt{5})P_{20}Y_{20} - (2/9)\sqrt{12/5}P_{22}Y_{22}$	$\sin^2\theta_1\sin^2\theta_2(1-\cos 2\Phi)$
4	$-8/9\sqrt{3/5}P_{2,2}Y_{2,-2}$	$-2\sin^2\theta_1\sin^2\theta_2\sin 2\Phi$
5	$8/9\sqrt{6/5}P_{2,1}Y_{2,1}$	$\sqrt{2}\sin 2\theta_1\sin 2\theta_2\cos\Phi$
6	$-8/9\sqrt{6/5}P_{2,1}Y_{2,1}$	$-\sqrt{2}\sin 2\theta_1\sin 2\theta_2\sin\Phi$
7	$(8/9)P_{00}Y_{00}$	$\frac{4}{9}$
8	$16/9P_{00}Y_{00} + 16/9/\sqrt{5}P_{00}Y_{20} + 16/9P_{20}Y00 + 16\sqrt{3}/9P_{10}Y_{10}$	$\frac{4}{3}(\cos\theta_1+\cos\theta_2)^2$
9	$16\sqrt{3}/2P_{10}Y_{00} + 16/9P_{00}Y_{10}$	$\frac{8}{3\sqrt{3}}(\cos\theta_1+\cos\theta_2)$
10	$16/(3\sqrt{3})P_{10}Y_{10}$	$\frac{8}{3}\cos\theta_1\cos\theta_2$
11	$(8/9)\sqrt{6}P_{11}Y_{11}$	$\frac{4\sqrt{2}}{3}\sin\theta_1\sin\theta_2\cos\Phi$
12	$(8/9)\sqrt{6}P_{11}Y_{1-1}$	$-\frac{4\sqrt{2}}{3}\sin\theta_1\sin\theta_2\sin\Phi$
13	$16\sqrt{3}/9P_{10}Y_{00} + 16/9P_{00}Y_{10} + 32/9P_{20}Y10 + 32/(9\sqrt{5})P_{20}Y_{20}$	$\frac{8}{\sqrt{3}}\cos\theta_1\cos\theta_2$ $\times(\cos\theta_1+\cos\theta_2)$
14	$(8/9)\sqrt{2/3}P_{21}Y_{11} + (24/9)\sqrt{2/15}P_{11}Y_{21}$	$\frac{4\sqrt{2}}{\sqrt{3}}\sin\theta_1\sin\theta_2$ $\times(\cos\theta_1+\cos\theta_2)\cos\Phi$
15	$-(8/9)\sqrt{2/3}P_{21}Y_{1-1} - (24/9)\sqrt{2/15}P_{11}Y_{2-1}$	$-\frac{4\sqrt{2}}{3}\sin\theta_1\sin\theta_2$ $\times(\cos\theta_1+\cos\theta_2)\sin\Phi$