

Table S2. Field notes and sample locations of Christmas Island volcanic rocks.

| Sample: | Lava series | Outcrop | Float | Locality |
|--|-------------|---------|-------|--|
| October 1987 field season Falloon et al. [222] | | | | |
| 70472 | LVS | X | | Waterfall, dyke (80cm wide) exposed in wave cut platform |
| 70473 | LVS | X | | Waterfall, cliff exposure on south side of the bay |
| 70477 | LVS | | X | Flying Fish Cove, above the boat club below the yellow limestone |
| 70479 | LVS | X | | Dolly Beach, northerly dipping dyke exposed in wavecut platform |
| 70452 | LVS | | X | The Dales, near Hugh's Dale |
| 70480 | LVS | X | | Dolly Beach, sample taken just beneath cliff outcrop |
| 70467 | LVS | | X | Greta Beach, taken from an old beach deposit just below an inland cliff |
| 70470 | LVS | X | | Environmental Trail |
| 70474 | LVS | X | | Dolly Beach, cliff exposure |
| 70475 | LVS | X | | Ethel Beach, cliff exposure |
| 70456 | LVS | | X | The Dales, no.5 |
| 70471 | LVS | | X | Waterfall, basalt cobble from an uplifted reef deposit exposed in limestone cliffs just north of Waterfall |
| 70476 | LVS | | X | Flying Fish Cove, hyaloclastite sampled above the Boat Club |
| 70469 | LVS | | X | Environmental Trail |
| 70455 | LVS | | X | The Dales |
| 70478 | LVS | | X | Flying Fish Cove, actual outcrop exposed higher up in the cliff behind the Kampong |
| 70481 | LVS | X | | Dolly Beach, aphyric lava flow |
| 70457 | UVS | X | | Winifred Beach, vesicular basalt flow |
| 70458 | UVS | | X | Winifred Beach |
| 70453 | UVS | | X | The Dales |
| 70454 | UVS | | X | The Dales |
| 70459 | UVS | X | | Winifred Beach, lava flow |
| 70461 | UVS | | X | Winifred Beach |
| 70462 | UVS | X | | Winifred Beach, lava cobble from an agglomerate |
| 70463 | UVS | X | | Winifred Beach, lava cobble from an agglomerate |

Table S2: continued

| Sample: | Lava series | Outcrop | Float | Locality |
|--|-------------|---------|-------|---|
| August 2008 field season Hoernle et al. [10] | | | | |
| CH1A | UVS | | X | Winifred Beach, blocks of slope debris |
| CH1B | UVS | | X | Winifred Beach, blocks of slope debris |
| CH2 | UVS | | X | Winifred Beach |
| CH3 | UVS | X | | Winifred Beach |
| CH4 | UVS | | X | Winifred Beach |
| CH7A | UVS | | X | The Dales, Hugh's Dale |
| CH7B | UVS | | X | The Dales, Hugh's Dale |
| CH5A | LVS | | X | The Dales, Hugh's Dale |
| CH5B | LVS | | X | The Dales, Hugh's Dale |
| CH6 | LVS | | X | The Dales, Hug's Dale |
| CH8 | LVS | | X | North East Point |
| CH9 | LVS | X | | Ross Hill Gardens; flow interbedded with limestones |
| CH10 | LVS | | X | Dolly Beach |
| CH11 | LVS | | X | Dolly Beach |
| CH12 | LVS | X | | Dolly Beach; block from agglomerate |
| CH13 | LVS | X | | Dolly Beach; dike |
| Hart [43] | | | | |
| X-1 | LVS | X | | Waterfall |
| X-2 | LVS | X | | Flying Fish Cove |
| X-3 | LVS | X | | Environmental Trail |
| X-4 | LVS | X | | Dolly Beach |
| X-5 | LVS | X | | Deans Point |

