19 November -- Christchurch, Kakahu

Maori Rock Carvings

Note: Plan on staying the night before at a hotel or hostel near our assembly point (see 18 November). If you miss the departure, please call us on the NZ mobile number. You will need to catch a bus to Geraldine from Christchurch. Once in Geraldine call again and we'll get you.

- 1) Meet at Latimer Square with all bags by 1:00 PM , downtown in Christchurch.
- 2) Load vans & drive to Maori Rock Carvings near Kakahu
- 3) Evening lecture: climate reconstruction with leaf physiognomy.

Accommodation: The Farmyard Holiday Park, Coach Road, Geraldine, phone/fax: 03-693 9355

20 November -- Kakahu

Climate reconstruction

Collect modern leaves and Paleocene fossil leaves, score and analyze using Jack Wolfe's CLAMP technique.

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21 November -- Kakahu

Climate reconstruction

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22 November -- Aoraki / Mt Cook

Drive to Mt Cook Village (3 hours)

Aoraki/Mt Cook National Park

Accommodation: Hermitage - Mt Cook Chalets . Aoraki Mount Cook Alpine Village, Private Bag, Terrace Road Mount Cook Village, New Zealand. Free Phone: 0800 68 68 00 Phone: + 64 3 435 1809, Fax: + 64 3 435 1879 Email: reservations@hermitage.co.nz Web: www.mount-cook.com

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23 November -- Aoraki / Mt Cook Hooker and Tasman Glaciers

Aoraki/Mt Cook National Park Hike Hooker Glacier or Tasman Glacier

Accommodation: Hermitage - Mt Cook Chalets . Aoraki Mount Cook Alpine Village, Private Bag, Terrace Road Mount Cook Village, New Zealand. Free Phone: 0800 68 68 00 Phone: + 64 3 435 1809, Fax: + 64 3 435 1879 Email:

reservations@hermitage.co.nz Web: www.mount-cook.com

24 November -- HaastDrive Haast via Haast Pass

Haast Pass, Alpine Fault

Accommodation: Haast Beach Holiday Park PO Box 8, HAAST Phone +64 3 750 0860

Fax +64 3 750 0860 Freephone 0800 THE CAMP (843 226) Email:

haastpark@xtra.co.nz Host: Paul Nolan

25 November -- Haast Haast Pass

Alpine fault. Uplifted beach terraces. Ultramafic moraine.

Accommodation: Haast Beach Holiday Park PO Box 8, HAAST Phone +64 3 750 0860

Fax +64 3 750 0860 Freephone 0800 THE CAMP (843 226) Email:

haastpark@xtra.co.nz Host: Paul Nolan

26 November -- Franz Joseph Glacier

Drive Haast to Franz Joseph (4 hours)

Rainforest hike

Accommodation: Mountain View Holiday Park www.mountainview.co.nz Ph +64 3 752 0735, Freephone (New Zealand only) 0800 46 78 97, Fax +64 3 752 0035, PO Box 46, Franz Josef

27 November -- Franz Joseph Glacier

Hike Franz Joseph Glacier

Accommodation: Mountain View Holiday Park www.mountainview.co.nz Ph +64 3 752 0735, Freephone (New Zealand only) 0800 46 78 97, Fax +64 3 752 0035, PO Box 46, Franz Josef

28 November -- Arthur's Pass Drive Arthur's Pass (3 hours)

Otira Viaduct Overlook -- Engineering in a geologically and environmentally sensitive area. Hike in Arthur's Pass National Park

Accommodation: Mountain House Backpackers http://www.trampers.co.nz/ Ph +64 3 318 9258, Fax +64 3 318 9058 PO Box 12, Arthur's Pass

29 November -- Christchurch Drive Christchurch (3 hours)

- 1) If hot & dry day, hike Cave Stream
- 2) Free afternoon/evening in Christchurch. If you like Indian food, try "Two Fat Indians" downtown.

Accommodation: Accommodation: North South Holiday Park Phone: +64-3-359 5993, Fax: +64-3-359 1257, Email: northsouth@paradise.net.nz, Web: www.northsouth.co.nz

30 November -- Travel Day Christchurch - Auckland - Rotorua

- 1) Fly Christchurch Auckland
- 2) Drive Auckland to Rotorua (3.5 hours)

AND

3) Hangi (traditional Maori meal cooked on hot rocks underground) & concert at Tamaki Maori Village.

Accommodation: Holden's Bay Holiday Park, Rotorua: +64, 7-345-9925; NZ: 0800-888-876;

1 December -- Rotorua

White Island OR Geothermal Areas & Overview of Rotorua city built in collapse caldera

1) White Island Tour (offshore, leave from Whakatane - 1 hr 30 min drive from Rotorua) Ph: +64 7 308-9588, Freephone 0800 733 529. Booked for morning sailing, leave Whakatane at 8:00. We must leave Rotorua by 6:15 AM

OR

- 1) Thermal Area: Wai-o-tapu: (07) 366-6333 (fax) 366-6010. www.geyserland.co.nz email: waiotapu-thermal@clear.net.nz
- 2) Thermal area: Waimangu: (07) 366-6137 (fax) 366-6607, www.waimangu.co.nz (hr. 08:30 to 17:00), valley walk: 2-3 hr; PO box 6141, Rotorua
- 3) Managing geothermal resources in Rotorua. Geothermal hazards in an expanding urban environment. 2001 Kuirau Park Steam and rock explosion.

OR

Rain options: 1) Rotorua Museum - 1886 eruption; 2) Wai-o-tapu (ok in rain) or Waimangu (ok in rain) or Buried Village (very good in rain) www.buriedvillage.co.nz email: discover@buriedvillage.co.nz (07) 362-8287 Tarawera RD, RD 5, Rotorua.

Accommodation: Holden's Bay Holiday Park, Rotorua: +64, 7-345-9925; NZ: 0800-888-876;

2 December -- Rotorua

White Island OR Geothermal Areas & Overview of Rotorua city built in collapse caldera

(same as 1 December)

Accommodation: Holden's Bay Holiday Park, Rotorua: +64, 7-345-9925; NZ: 0800-888-876;

3 December -- Rotorua to Taupo

Taupo eruption

- 1) Drive Lake Taupo field stops, Taupo Eruption
- 2) Arrive at Tongariro National Park.
- 3) Evening presentation: History of eruption in Tongariro by Peter Otway (025) 223-3524 or (07) 378-5901. email: volcanot@voyager.co.nz

Accommodation: Discovery Lodge, State Hwy 47 and 48, PO Box 55, National Park, +64, 7, 892-2744 (fax) 892-2603. Hosts: Harland family. Email: info@discovery.net.nz

4 December -- National Park

(Tongariro National Park) (same as next day)

1) Hike the Tongariro Crossing (Full Day hike) Mangatapopo Hut. Ngauruhoe volcano, eruptive deposits and nueé ardente flows of 1978, Red Crater fumerole activity. Shuttle drop off and pickup at trail heads: 07:00 AM departure.

OR (cloud/rain)

1) Whakapapa skifields and the 1996 lahar that crossed the ski fields, DOC visitor center. Ruapehu crater and lahar danger. Eruption warning system. (IGNS geologists). Discussion of 1995 and 1996 eruptive sequences.

Whakapapa DOC visitor center. (07) 892-3729 (fax) 892-3814, www.doc.govt.nz; "Volcanoes of the Southwind" and "Sacred gift of Tongariro" Chair lift: (09:00 to 13:30 - last ride up): www.whakapapa.co.nz

OR (rain)

1) Whanganu River and lahar deposits from 1996 and 1943. 1943 Tangiwai train disaster. Desert road, ring-plain deposits.

Tangiwai disaster Site stop Ring plain deposits (East Desert Rd)

(a) Waikato Stream crossing: 10 m deposits incised by river, lahar deposit.

(b) Waihohonu Stream crossing: Taupo deposits, pumice clasts, carbonized wood deposits, lahar deposits.

Accommodation: Discovery Lodge, State Hwy 47 and 48, PO Box 55, National Park, +64, 7, 892-2744 (fax) 892-2603. Hosts: Harland family. Email: info@discovery.net.nz

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6 December - Optional return to Auckland : END of TERM ABROAD