



FT05 - Porphyry and Epithermal Systems of the Sunda Banda Arc, Indonesia

Date: October 1-8, 2015

Location: Departing from and returning to *Bali, Indonesia*

Leaders: David Cooke, Adi Maryono, Iryanto Rompo

Attendee Maximum: 17

This field trip will introduce participants to the geology and mineralisation that characterises the Sunda-Banda arc. It will include site visits to giant porphyry Cu-Au deposits (Batu Hijau, Tumpangpitu), modern hydrothermal systems on an active volcano (Mt Ijen), and exploration projects on Lombok and Sumbawa. In addition to site visits, participants will have the opportunity to spend one day learning and applying the Anaconda mapping method inside the Batu Hijau open pit.

This field excursion starts with a visit to the Tujuh Bukit project, where the 30.1 Moz Au Tumpangpitu porphyry Cu-Au-Mo and HSE Au-Ag deposit was discovered in 2010, making it one of the largest discoveries in SE Asia in recent times. Tumpangpitu exhibits a classic example of telescoped Au-Ag (oxide) and Au-Ag-Cu unoxidised high sulfidation mineralization and associated advanced argillic alteration (part of a district-scale lithocap) overprinting the top of a Cu-Au-Mo porphyry deposit. The project also offers the opportunity to examine a world class exposure of telescoped HSE mineralization onto an outcropping island of porphyry mineralisation at Pulau Merah. A transect by boat and foot along the coastline will examine exposures of upper and lower facies of a diatreme breccia body, as well as proximal to distal hydrothermal alteration of host rocks associated with high-sulfidation mineralization.

Tujuh Bukit will be followed by a visit to the active volcano and largest crater lake on Earth at Mt Ijen in East Java. Participants will observe the famous “blue fire” from the active fumeroles before sun rise and descend from the crater rim to the fumeroles, sulfur deposits - actively mined by locals, the steaming acid crater lake and observe vast exposures of advanced argillic altered crater walls associated with the active magmatic-hydrothermal system.

On the island of Lombok, participants will visit field exposures of a barren lithocap, ISE, HSE and porphyry mineralization with a focus on exploration techniques to vector towards mineralization in the lithocap environment. Drillcore will be observed from Brambang and Selodong porphyry prospects, as well as Pelangan/Mencanggah HSE prospects to link exploration drilling and targeting to field observations.

The trip will end with a visit to Newmont’s Batu Hijau porphyry Cu-Au mine (20.05 Moz Au) where participants have the opportunity to review porphyry mineralization in drillcore from Batu Hijau, as well as regional deposits including Elang (25 Moz Au). A day in Batu Hijau open pit will focus on training participants in the use of Anaconda mapping techniques.

Includes accommodation, food and local ground transport. Does not include any flights.



Itinerary Update

Due to the cancellation of flight GA7301 Denpasar, Bali 7:15am to Banyuwangi, East Java on Friday, October 2, 2015, and other domestic flight changes, **the original itinerary has been updated to the following:**

Thursday, October 1, 2015

Prior to 7:00pm: All participants arrive at Hotel Ketapang Indah Banyuwangi, East Java
For participants arriving to Bali (original schedule) who cannot connect with domestic flights to East Java, cars will depart from Bali International Arrivals at 2.30pm and drive directly to Banyuwangi (approx. 4.5 hour drive including 1-1.5 hour ferry crossing)

7:30pm: Welcome and logistics meeting, Ketapang Indah Hotel Meeting Room

8:00pm: Evening Introductory Presentations (or Friday morning depending on arrival times of participants)

- Tumpangpitu Porphyry-High Sulfidation Epithermal Deposit, Tujuh Bukit Project, Indonesia – Geology, Alteration and Mineralisation (Rachel Harrison)

Contacts:

Trip Leader 1: David Cooke | d.cooke@utas.edu.au, +61 419530152

Trip Leader 2: Adi Maryono | maryono.adi@gmail.com, +62 81288887448

Assistant 1: Rachel Harrison | racharrison@gmail.com, +62 82147123448

Assistant 2: Iryanto Rompo | iryantorompo@gmail.com, +62 8111555665

Accommodation:

Hotel Ketapang Indah

Jl. Gatot Subroto km.6 Banyuwangi 68421, East Java, Indonesia

info@ketapangindahhotel.com, +62 333422280

Friday, October 2, 2015 - East Java: Tumpangpitu Porphyry-HSE Deposit and Pulau Merah Porphyry Island Coastal Exposure

7:00am - 9:00am: Drive to Pulau Merah village (Tujuh Bukit project)

9:00am - 10:00am: Tujuh Bukit site presentations

10:00am - 12:00pm: Drillcore review: Two HSE oxide drillholes and two porphyry drillholes

12:00pm - 1:00pm: Lunch at Pulau Merah

1:00pm - 5:00pm: Transect coastal outcrop from proximal to distal alteration and walk to Pulau Merah porphyry island at low tide (hiking sandals or wellies recommended for walking along tidal platform)

6:00pm - 9:00pm: BBQ on the beach and evening presentations

- Porphyry and Epithermal Deposits of the Western Pacific (David R Cooke)
- An Introduction to Porphyry Cu-Au and Related Epithermal Au-Ag Systems along the Eastern Sunda Arc (Adi Maryono)

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Nunung Sulistyorini (organizer of accommodation), PA Tujuh Bukit project | +62 8113085127

Accommodation:

Pulau Merah beach guesthouses

Saturday, October 3, 2015 - East Java: Tujuh Bukit Project: Tumpangpitu Porphyry-HSE Deposit and Pulau Merah Porphyry Island Coastal Exposure

- 7:00am - 7:45am: Boat trip Pulau Merah to southern coastline
- 7:45am - 9:15am: Walk along southern coastline to examine diatreme breccia exposure
- 9:15am - 10:00am: Return by boat passing seaward perimeter of Pulau Merah island - observe porphyry stockwork veining
- 10:30am - 1:30pm: Drive to Mt Ijen guesthouse (lunch on the way)
- 1:30am - 5:00pm: Rest before early morning hike tomorrow or opportunity to visit local hot springs, waterfalls, coffee, and strawberry plantations (20-30 minute drive)
- 5:00pm - 5:20pm: Drive to Pak Iwan coffee house and plantation
- 5:20pm - 8:00pm: Cultural evening and traditional Javanese dinner at Pak Iwan coffee house

Accommodation:

Java Banana or Ijen Resto and Guesthouse Ijen road, Desa Taman Sari, Licin, Banyuwangi 68417
+62 (0)85236768768

Sunday, October 4, 2015 - East Java: Mount Ijen Active Volcano and Crater Lake

- 2:40am - 3:00am: Drive to Entrance of Mt Ijen National Park
- 3:15am - 5:00am: Hike 3km from PHKA Post to lip of Kawah Ijen crater lake at 2148m
- 5:00am - 5:45am: View "blue fire" from the fumeroles before sun rises and eat breakfast (packed breakfast provided)
- 5:45am - 6:30am: Descend to active fumeroles, sulfur deposits, steaming acid lake, and advanced argillic altered crater walls (n.b sulphurous fumes increase towards the base of the crater, gas/dust masks will be provided)
- 7:30am - 8:15am: Hike back to lip of crater
- 8:15am - 9:45am: Descend 1km to tea house observing excellent outcrops along the track of advanced argillic alteration and charcoaled wood fragments..geology discussion
- 9:45am - 10:30am: Tea break and snack at tea house warung
- 10:30am - 11:30am: Descend to PHKA Post

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- 11:30am - 2:30pm: Drive to Banyuwangi airport, stop for lunch on the way
3:25pm - 5:25pm: Flight Garuda Indonesia GA 7313 Banyuwangi to Denpasar, Bali
7:30pm - 8:15pm: Flight Garuda Indonesia GA 7030 Denpasar, Bali to Lombok Praya
8:30pm - 10:00pm: Drive from Lombok airport to Sekotong, SW Lombok; Dinner provided at Cocotinos hotel

Note:
Reasonable level of fitness and appropriate PPE is required to hike to Mt Ijen. Tracks are steep and gravelly in places. The crater lip can be cold and windy early morning - jacket recommended.

Accommodation:
Cocotinos Boutique Beach Resort and Spa
Jl Dusun Pandanan, Desa Sekotong Barat, Kecamatan Sekotong, Kabupaten Lombok Barat
+62 81907972401

Monday, October 5, 2015 - Lombok: A Complete Field Transect from Lithocap, HSE, ISE to Porphyry Mineralization

- 7:00am - 8:30am: Morning presentation after breakfast
• Geology and Metallogeny of SW Lombok (Adi Maryono)
8:30am - 9:00am: Drive to Sundancer lithocap
9:30am - 5:00pm: Examination of complete profile from barren lithocap at Sundancer, HSE mineralization at Rambut Petung, diatreme breccia (road cut exposure) and porphyry mineralization at Brambang (drillcore review). Packed lunch provided, dinner provided at Cocotinos Hotel.
7:00pm - 9:00pm: Evening Presentation
• Exploring lithocaps (David R Cooke)

Contact:
Syafuruddin Maula, Independent Consultant | +62 81805239397

Accommodation:
Cocotinos Hotel

Tuesday, October 6, 2015 - Lombok: HSE and ISE at Pelangan/Mencanggih, Porphyry at Selodong

- 8:00am - 9:30am: Drive from hotel to Selodong prospect
9:30am - 12:00pm: Southern Arc coreshed. Presentation and examine field outcrop
12:00pm - 1:00pm: Lunch provided at Selodong camp
1:00pm - 2:30pm: Drillcore review on HSE at Pelangan/Mencanggih and porphyry at Selodong

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- 2:30pm - 4:30pm: Drive to Kayangan port Lombok
- 5:00pm - 6:30pm: Newmont ferry to Benete port, Sumbawa
- 6:30pm - 7:15pm: Drive to Tropical hotel (Batu Hijau mine resort)
- 8:00pm - 9:00pm: Evening Presentation after dinner
 - Appraisal of Leached Cap and Porphyry Mapping Techniques (Adi Maryono)

Contacts:

Andrew Rowe, Ex-VP Exploration, Southern Arc Minerals | +62 8111830904
Djonet Widiyanto, Project Geologist, Southern Arc Minerals | +62 8128195947

Accommodation:

Tropical Hotel Sekongkang, Nusa Tenggara Barat, Sumbawa (Newmont mine resort/hotel)

Wednesday, October 7, 2015 - Sumbawa: Batu Hijau Porphyry Cu-Au Mine

- 7:00am - 8:00am: Drive Tropical hotel to Batu Hijau mine
- 8:00am - 9:00am: Presentation on Batu Hijau (Eddy Priowasono)
- 9:00am - 12:00pm: Pit tour (Eddy Priowasono)
- 12:00pm - 1:00pm: Lunch (provided at mine)
- 12:00pm - 5:00pm: Anaconda mapping exercise in Batu Hijau pit
- 5:00pm - 6:00pm: Drive back to Tropical hotel, dinner provided at hotel
- 6:00pm: Final departing dinner

Contacts:

Agung Naruputro, Geology Manager, Batu Hijau Mine | +62 81139441494
Eddy Priowasono, Chief Geologist, Batu Hijau Mine | +62 8113941116

Accommodation:

Tropical Hotel Sekongkang, Nusa Tenggara Barat, Sumbawa (Newmont mine resort/hotel)

Thursday, October 8, 2015 - Sumbawa: Batu Hijau Porphyry Cu-Au Mine

- 8:00am - 9:00am: Drive from Tropical hotel to Batu Hijau mine
- 9:00am - 12:00pm: Drillcore review Batu Hijau porphyry and other prospects
- 12:00pm - 12:45pm: Lunch (provided at mine)
- 12:45pm - 1:15pm: Drive to sea plane take off area
- 1:30pm - 1:45pm: Newmont's sea plane Batu Hijau to Lombok Praya International airport (LIA)
(9 pax maximum, 3 trips required) OR Newmont ferry (depart 8:00am, arrive 9:30am)

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5:25pm - 6:15pm: Fly Lombok to Bali, recommended flight: Garuda Indonesia GA437 or earlier flight with other airlines. Alternatively stay and have a holiday on Lombok.

Flight Information

All participants are responsible for booking their own international flights to/from Bali, and also their domestic flights. Note - all flight times are current as of updating this itinerary (June 2015), they are all subject to airline changes outside of our control! The national airline Garuda Indonesia is preferred over smaller airlines e.g., Lion Air/Wings Air etc. in terms of safety and delay issues.

Optional flights for earlier arrival to Banyuwangi to connect with International flights from Australia/Singapore/Kuala Lumpur to Banyuwangi (1 hour time difference between Bali and East Java):

Thursday, October 1, 2015 at 3:10pm - Depart from Denpasar, Bali on Garuda Indonesia airlines, **flight GA 7312**
Thursday, October 1, 2015 at 2:55pm - Arrive at Banyuwangi, East Java

Thursday, October 1, 2015 at 11:45am - Depart from Surabaya, East Java on Garuda Indonesia airlines, **flight GA 7304**
Thursday, October 1, 2015 at 12:45pm - Arrive at Banyuwangi, East Java

Thursday, October 1, 2015 at 12:00pm - Depart from Surabaya, East Java on Wings Air (Operated under Lion Air),
flight IW 1880
Thursday, October 1, 2015 at 12:50pm - Arrive at Banyuwangi, East Java

NB Driving option for participants arriving to Bali (original schedule) cars will depart from Bali International Arrivals at 2:30pm and drive directly to Banyuwangi (approx. 4.5 hour drive including 1-1.5 hour ferry crossing)

Note: Lombok has two airports; Mataram (low cost airlines) and the new Lombok Praya International airport (LIA).
Also Note: The sea plane from Batu Hijau lands at LIA. Recommended flights below (most convenient times):

Sunday, October 4, 2015 at 3:25pm - Depart from Banyuwangi, East Java on Garuda Indonesia airlines, **flight GA 7313**
Sunday, October 4, 2015 at 5:25pm - Arrive at Denpasar, Bali

Sunday, October 4, 2015 at 7:30pm - Depart from Denpasar, Bali on Garuda Indonesia airlines, **flight GA 7030**
Sunday, October 4, 2015 at 8:15pm - Arrive at Lombok Praya airport (LIA)

Thursday, October 8, 2015 at 5:25pm - Depart from Lombok Praya airport (LIA) on Garuda Indonesia airlines, **flight GA 437**
Thursday, October 8, 2015 at 6:15pm - Arrive at Denpasar, Bali



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