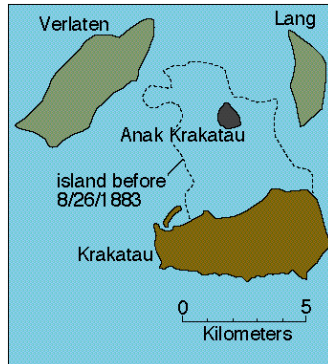


Krakatoa, 1883

Reverences:

Simpkin and Fisk, 1983,
Krakatoa 1883

Francis, pp. 73-83



From Simkin and Fiske, 1983



Sequence of Happenings

- Precursors
 - Earthquakes began in late 1870s
 - Volcano comes to life in May 1883
- Main event
 - August 27, 1883

Consequences

- Volcanic products
- Caldera
- Tsunami



Precursors

- Numerous small earthquakes in late 1870's
- Strong earthquake on 1/9/1880
 - Caused local destruction
 - Felt as far as Australia
- Seismic activity increased in intensity

Eruption Begins

May 20, 1883

Loud explosions heard for 150 km
Atmospheric pressure waves
Ash fallout for 500 km
Semi continuous activity
Ash fountain 200 m high

Early Stages

- June, 1883
 - Eruption column increase in height
 - Two vents emitting ash
 - Strong explosions and earthquakes
- August, 1883
 - All local vegetation killed
 - Three vents emitting ash

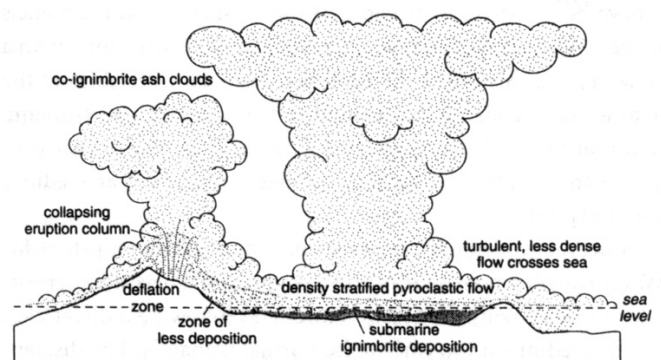
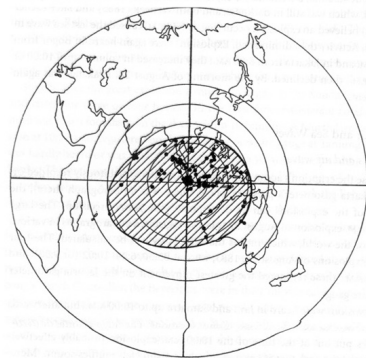
Main Stage

August 26, 1883

1:00 p.m. loud explosions every 10 minutes
2:00 p.m. black cloud rises to 25 km
5:00 p.m. explosions heard throughout Java
7:00 electrical charges light whole area
St. Elmo's fire illuminates ships

Climax

- August 27, 1883
 - 4:00 am brief quiet period
- Several large explosions: 5:30, 6:44, 10:02
 - heard in Australia at 3224 km
 - 10:52



Results

- Tsunamis
 - Large ocean waves generated by caldera collapse
 - Caused 36,000 deaths
- Eruption column
 - 80 km height
 - Ash fell 1850 km distant at Cocos islands
 - Total darkness in Batavia for 1.5 hours

Geological Effects

- Giant caldera formed
 - 600 m of collapse
 - About 10 km diameter
- 15-20 km³ of material ejected
- Most of ejecta emplaced as ash flows
- World-wide atmospheric effects
 - Spectacular sunsets
 - Lowered global temperature by 0.6° c