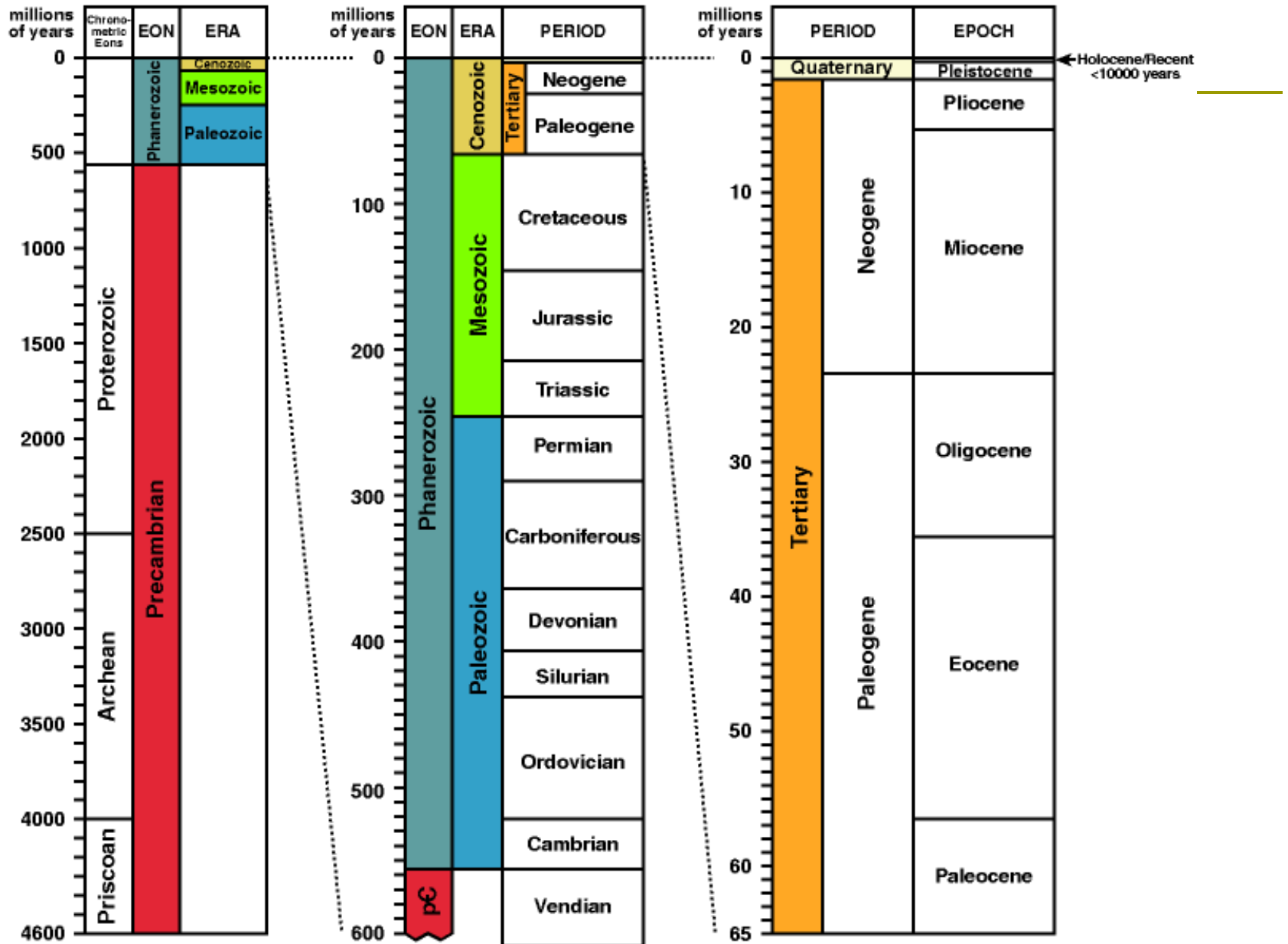


# Geology of Sri Lanka



# Geological time scale



# Formation

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- Nine tenths of Sri Lanka is made up of highly crystalline, non fossiliferous rocks
- Precambrian age
- The rest, north western region, Jurassic, Miocene and Quaternary sedimentary formations
  - Jurassic-Thabbowa, Andigama, Pallama
  - Miocene-Jaffna limestone
  - Quaternary-Beach sand deposits

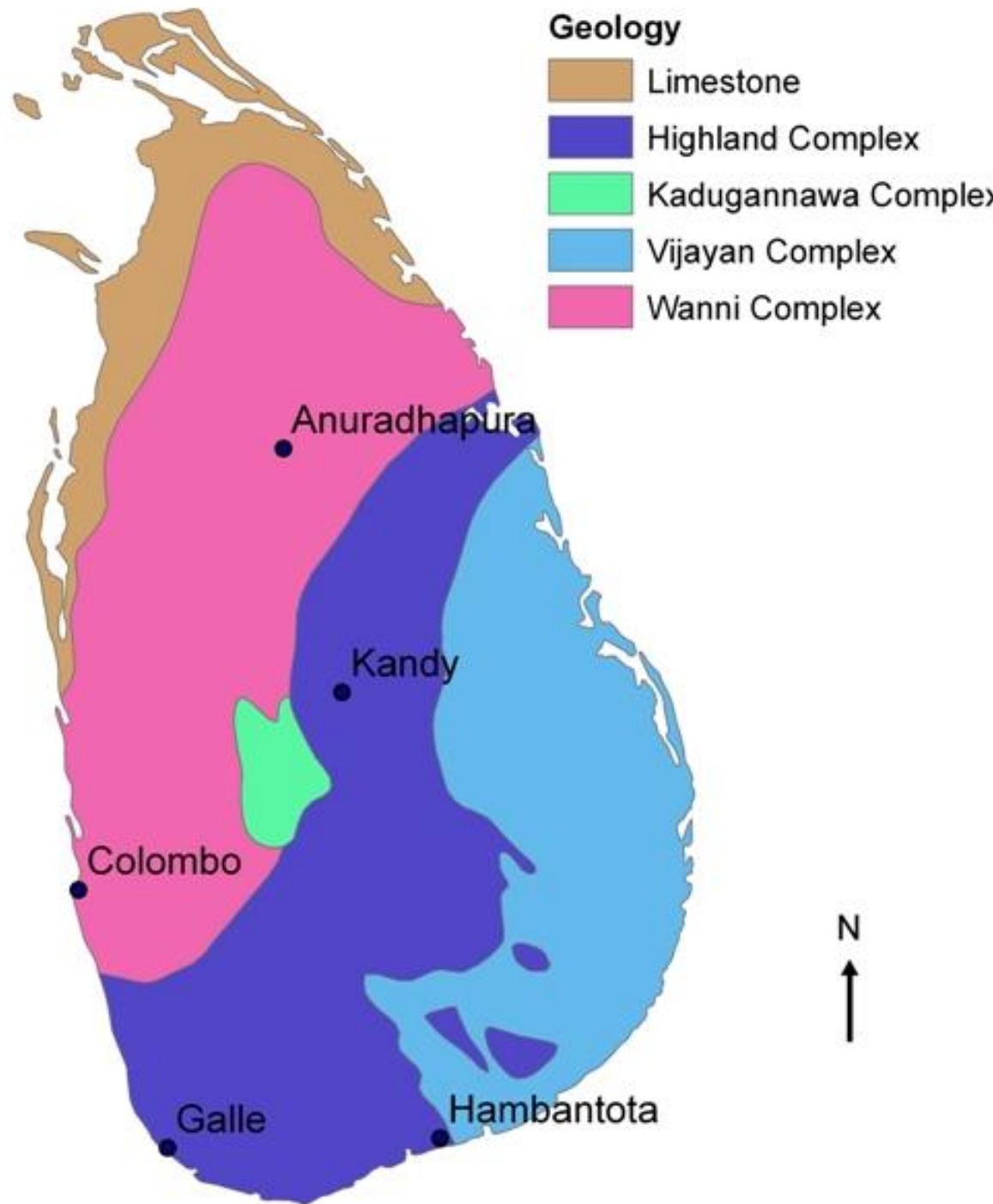
# Precambrian

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- Running north-northeasterly
- Four major divisions
  - Highland complex
  - Vijayana Complex
  - Wanni Complex
  - Kadugannawa Complex

# Geology map

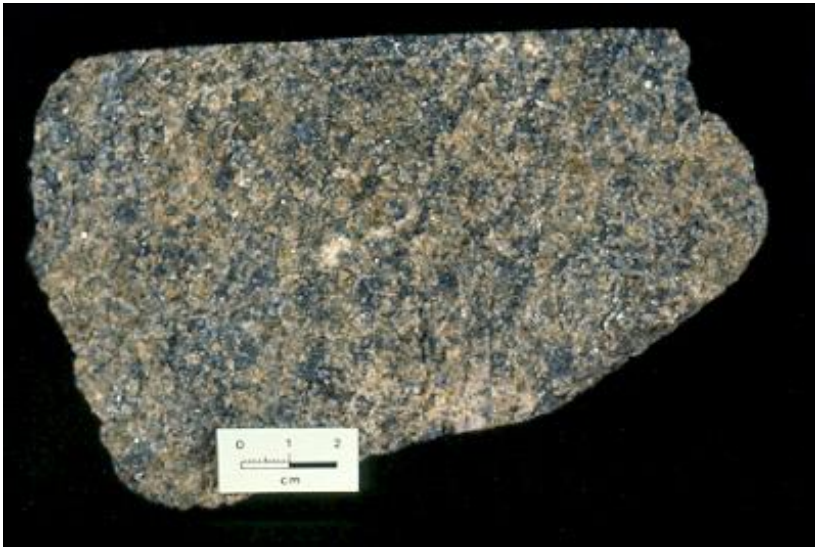
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# The Highland Complex (HC)

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- ❑ Composed of inter-banded metamorphic rocks
- ❑ Broad
- ❑ Running across the center of the island from southwest to northeast
- ❑ Granulite facies rocks
  - Charnokitic gneiss
  - Marble
  - Quartzite
  - Quartzofeldspathic gneiss



Hornblende gneiss

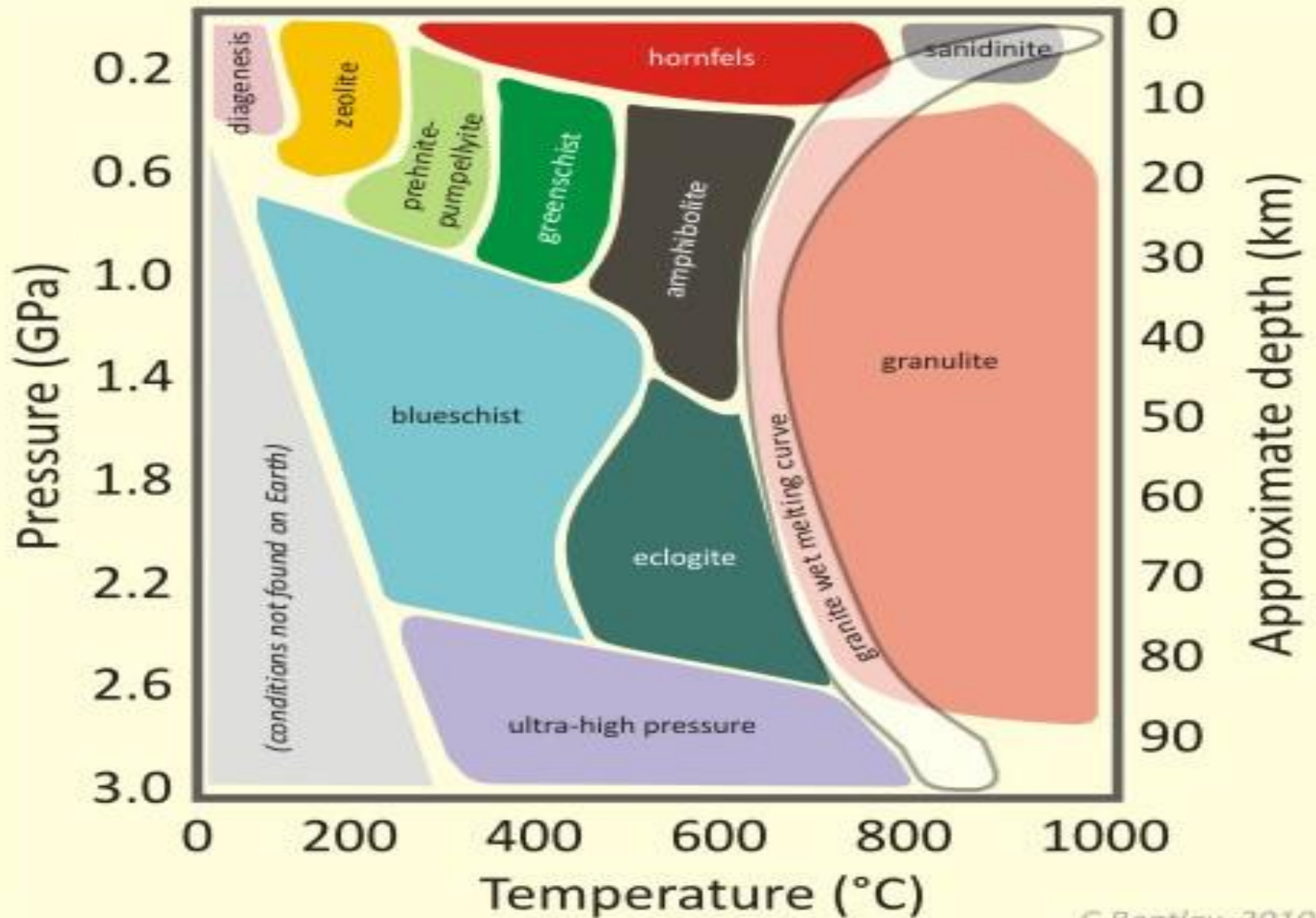


Quartzofeldspathic gneiss



Marble

# Metamorphic facies





# Age of HC

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- Metasediments aged 2000 million years
- So the HC represents 2000 m.y. old crust
- Regional metamorphism took place at 665-550 m.y. ago
- Medium pressure
- Very high temperature

# Wanni Complex (WC)

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- ❑ No clear boundary between HC and WC
- ❑ Less older than HC
- ❑ Low metamorphic grade rocks than HC
  - Hornblende bearing gneiss
  - Pink granite



# Vijayan Complex (VC)

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- **Amphibolite facies metamorphism**
  - Low pressure
  - Low temperature compared to HC

# Highland – Vijayan boundary

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- ❑ **Thrust zone**
- ❑ Mineralized belt
  - Hot springs
  - Lot of minerals throughout
    - ❑ Magnetite
    - ❑ Serpentine
    - ❑ Vein quartz
    - ❑ Cu-magnetite
- ❑ Well demarcated but wide
- ❑ Outliers can be seen as Buttala and Kataragama Klippen due to thrusting of HC over VC

# Kadugannawa Complex (KC)

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- ❑ Infolded within HC
- ❑ Granulite facies metamorphism
- ❑ high temperatures and pressures associated with the process of metamorphism
- ❑ No agreement on the origin of these rocks
- ❑ Biotite-hornblende gneiss and amphibolites

Thank you!

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