

- 1) What is longshore transport and how does it occur?
- 2) Would a prograding shoreface sequence coarsen or fine upward? Why?
- 3) What are the major types of aeolian dunes & their formative wind conditions?
- 4) How do aeolian deposits record atmospheric circulation patterns?

Due: Mon, March 20th , 10 AM

- 1) Longshore transport is the shore-parallel movement of sediment along coastlines that is generated by longshore currents that result from the refraction of waves that approach a coastline at an oblique angle.
- 2) A prograding shoreface will have a coarsen-upward. The highest energy transport conditions (and coarsest materials) are found nearest the coast and lowest energy transport conditions (and finest materials) are found at offshore positions. As the shoreline progrades, it would deposit beach sediments on top of offshore sediments resulting in coarse sediments on top of fine sediments, coarsening-upward.
- 3) Barchans – unidirectional winds (sediment starved)
Tranverse – unidirectional winds (sediment rich)
Linear – 2 dominant wind directions both at relatively low angles to dune crests
Parabolic – unidirectional winds with significant vegetation effects
Star – multidirectional winds
- 4) Mean transport directions and dune types are directly related to long-term wind patterns. Because winds are a direct manifestation of atmospheric circulation (driven by insolation gradients), structures that record dune migration and sediment transport direction can be interpreted as a record of local atmospheric circulation patterns.