Two conditions for successful prediction:

1) Accurate representation of current state.
2) Intrinsic laws governing motion must be known.

weather prediction = initial value problem.

Three components:

1) Observations.
2) Diagnosis of observations.
3) Prognosis.

1) Observations

Major milestones:

- telegraph: instantaneous transmission of data.
- radiosonde: profiles of wind and temperature.
- radar: precipitation and indirect observing.
- satellites: great spatial coverage.