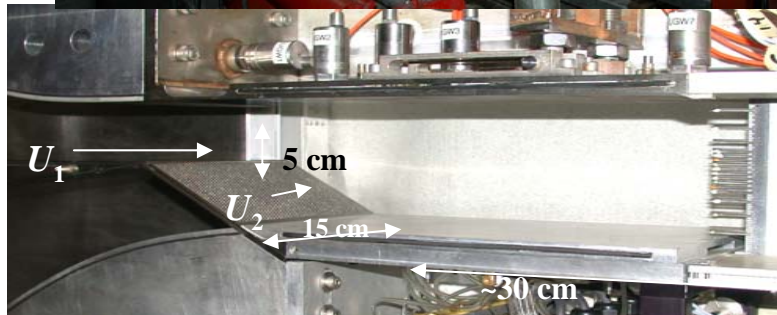


Supersonic Mixing/Combustion Facility



- Supersonic mixing/combustion facility
 - Highest speed attained: $U_{max} = 2 \text{ km/s}$
 - Max mass flow rate: 10 kg/s
 - Can handle most gases (H_2 and F_2 reactants)
 - Quantitative measurements of molecular mixing
 - Mixing and combustion in compressible (supersonic) turbulent flows
 - Aerooptical effects
- Scramjet and Combined-Cycle Hypersonic Propulsion -- MURI effort
 - Caltech (lead), U. Minnesota, U. Buffalo, and Virginia Tech

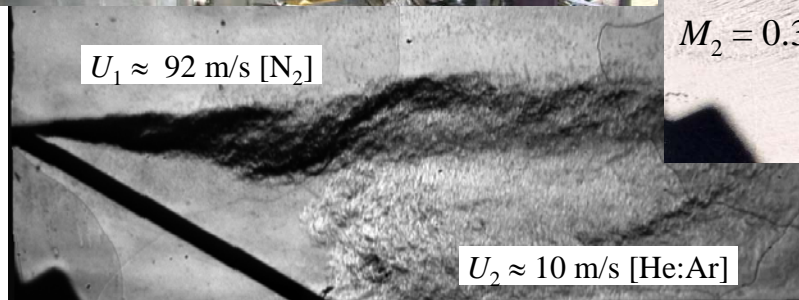


$U_1 \approx 92 \text{ m/s} [\text{N}_2]$



$M_1 = 2.5 [\text{He}]$

$M_2 = 0.3 [\text{N}_2]$



$U_2 \approx 10 \text{ m/s} [\text{He:Ar}]$

