(1) The new Hubble Space Telescope will have a mirror of 2.4 m diameter. Using it, with no air in the way, how far away could you read a license plate?

The angular resolving power at a wavelength of 0.5 μm will be approximately λ / d, or 2×10^{-7} rad. Resolution of 1 cm at the object ought to be adequate. If so, you could read the license number at a distance of 50 km. (Of course, you would need a suitable eyepiece.)