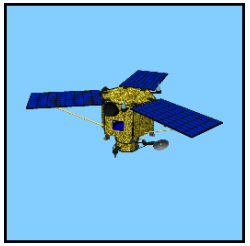
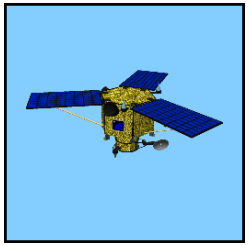
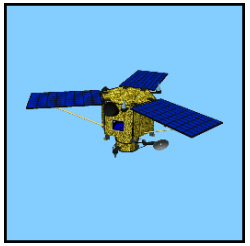


Perspective Geometry

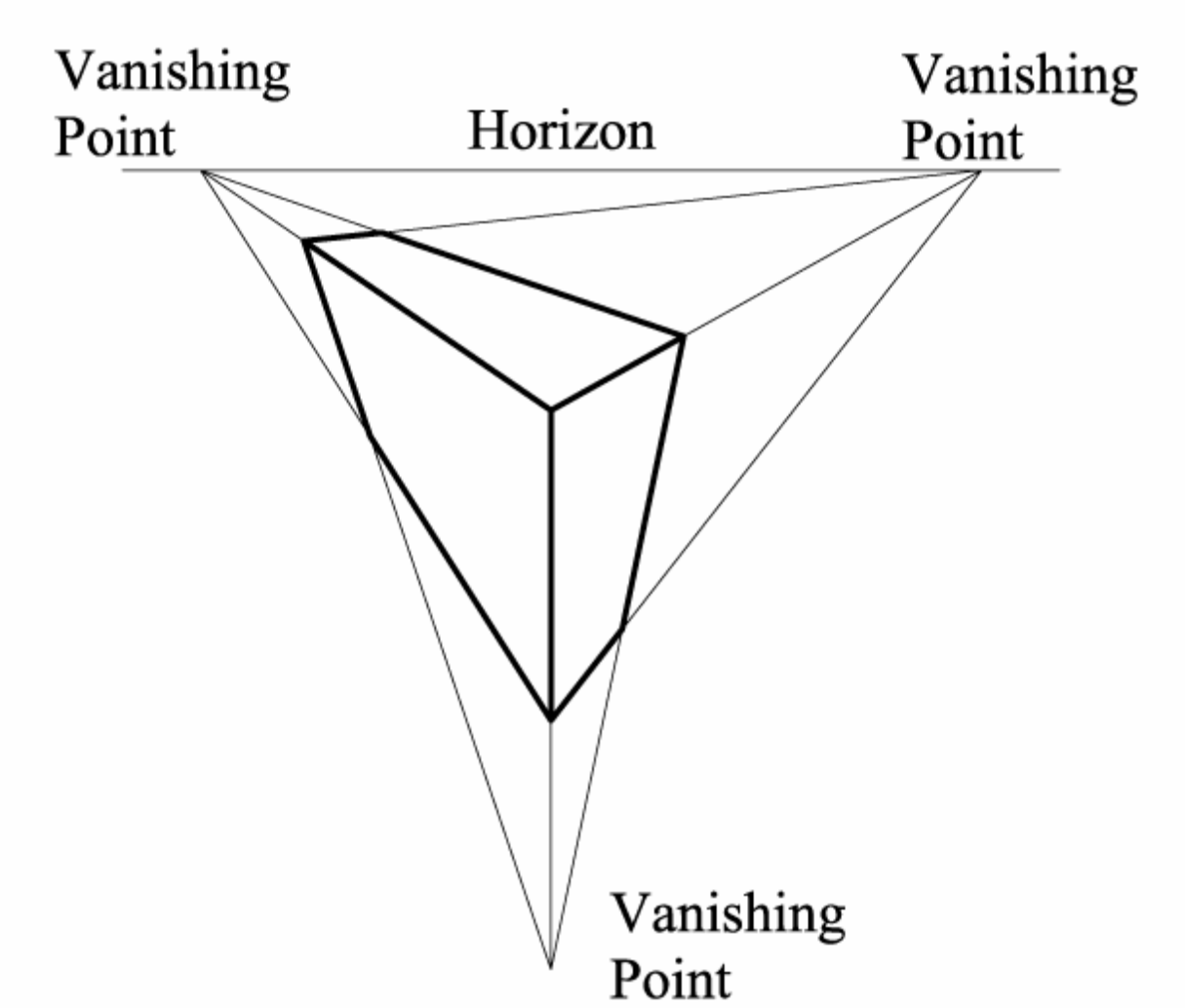
- Parallel lines (in object space) converge to a *vanishing point* in the perspective image
- The vanishing points for all horizontal lines are on the horizon
- There is a common vanishing point for all vertical lines
- If the image plane is parallel to any set of parallel lines, then they will appear parallel in the perspective image (i.e. the vanishing point is at infinity)

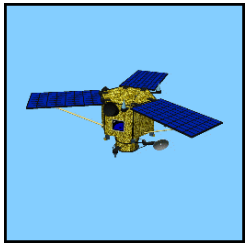


Parallel Object Lines Converge to *Vanishing Point* in the image

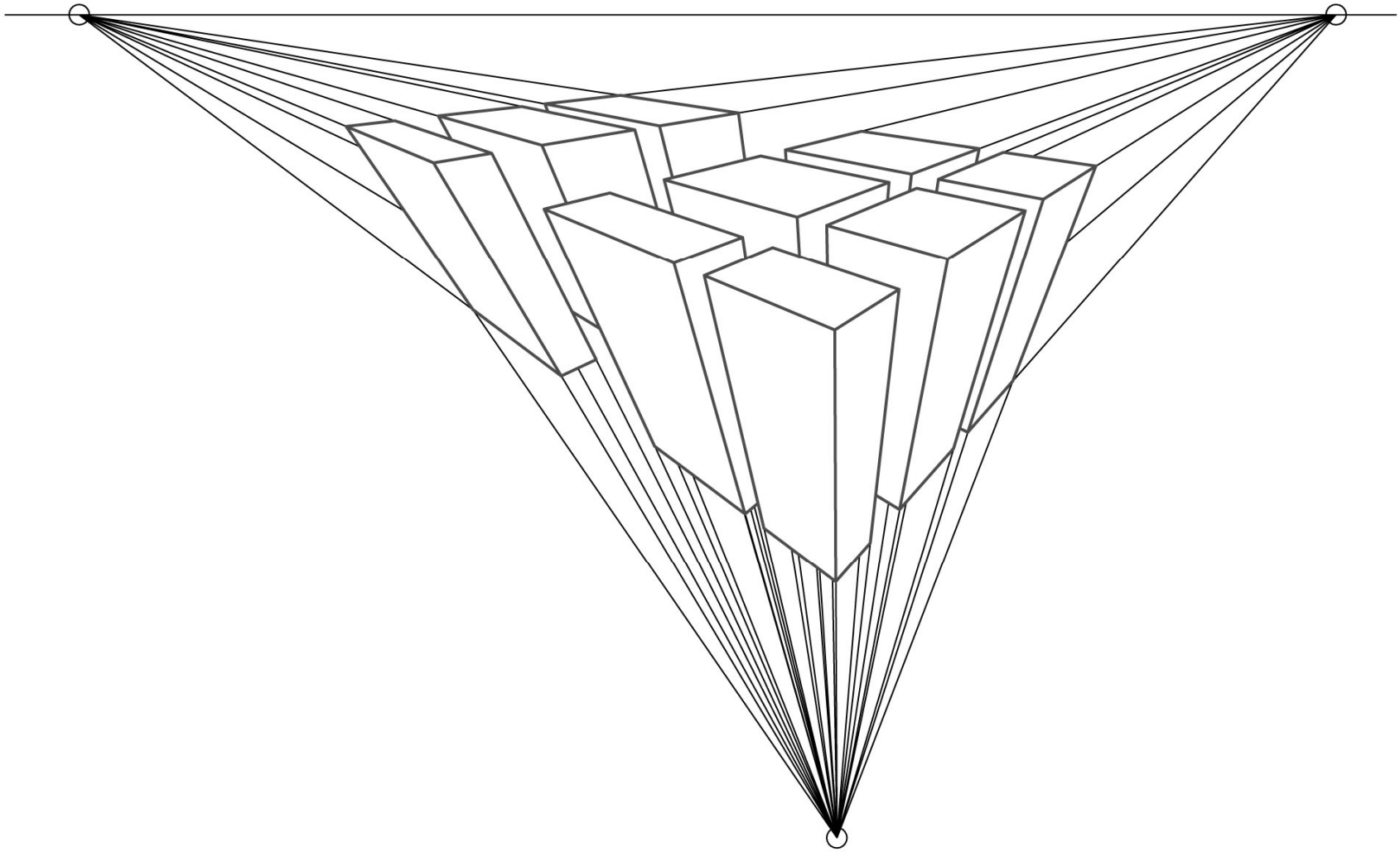


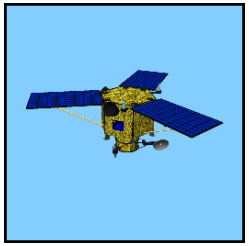
3 Sets of Parallel Lines

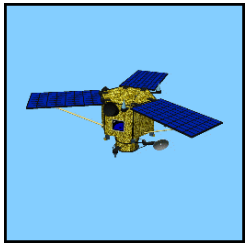




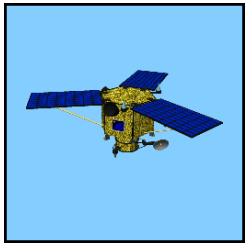
It remains true for all sets of parallel lines in the scene – if they are parallel in object space, then (unless parallel with image plane) they will meet at a vanishing point in the perspective image



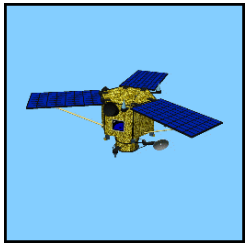




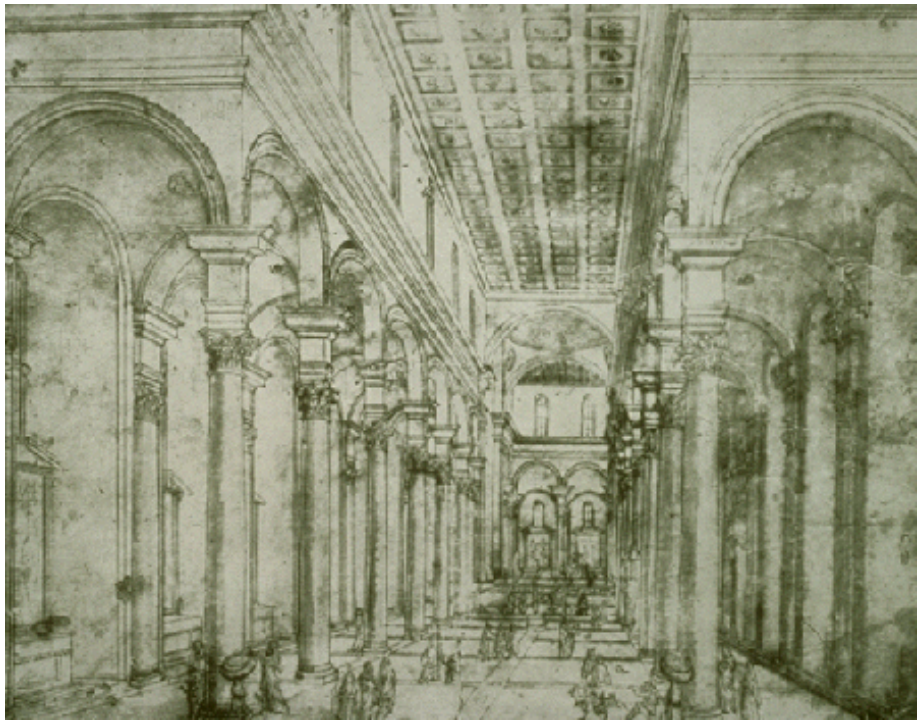

U.S. COAST GUARD AND U.S. COAST AND GEODET

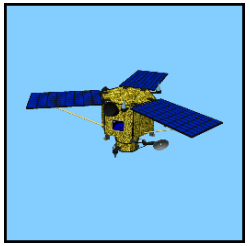


Medieval Artists Had Poor Understanding of Perspective Geometry

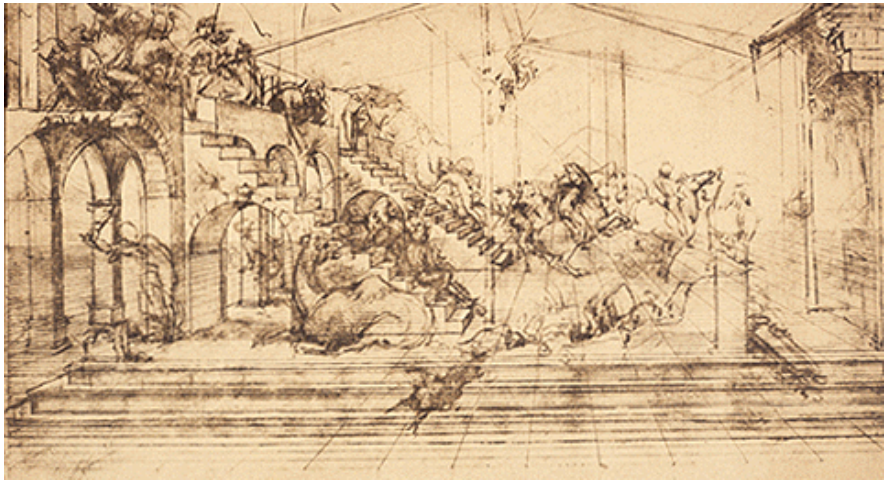


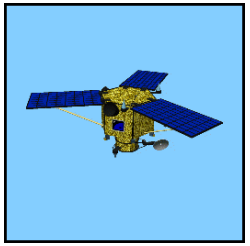
Brunelleschi (1415) engineer and architect made sketch at left, compare with photograph of today



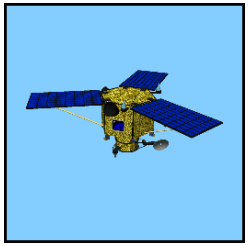


Leonardo da Vinci, Adoration of the Magi, 1481, and the Last Supper, 1498





Albrecht Durer, St. Jerome in his study, 1514



Vermeer, The Music Lesson, 1662, Perspective is so accurate, some believe he used *camera obscura*