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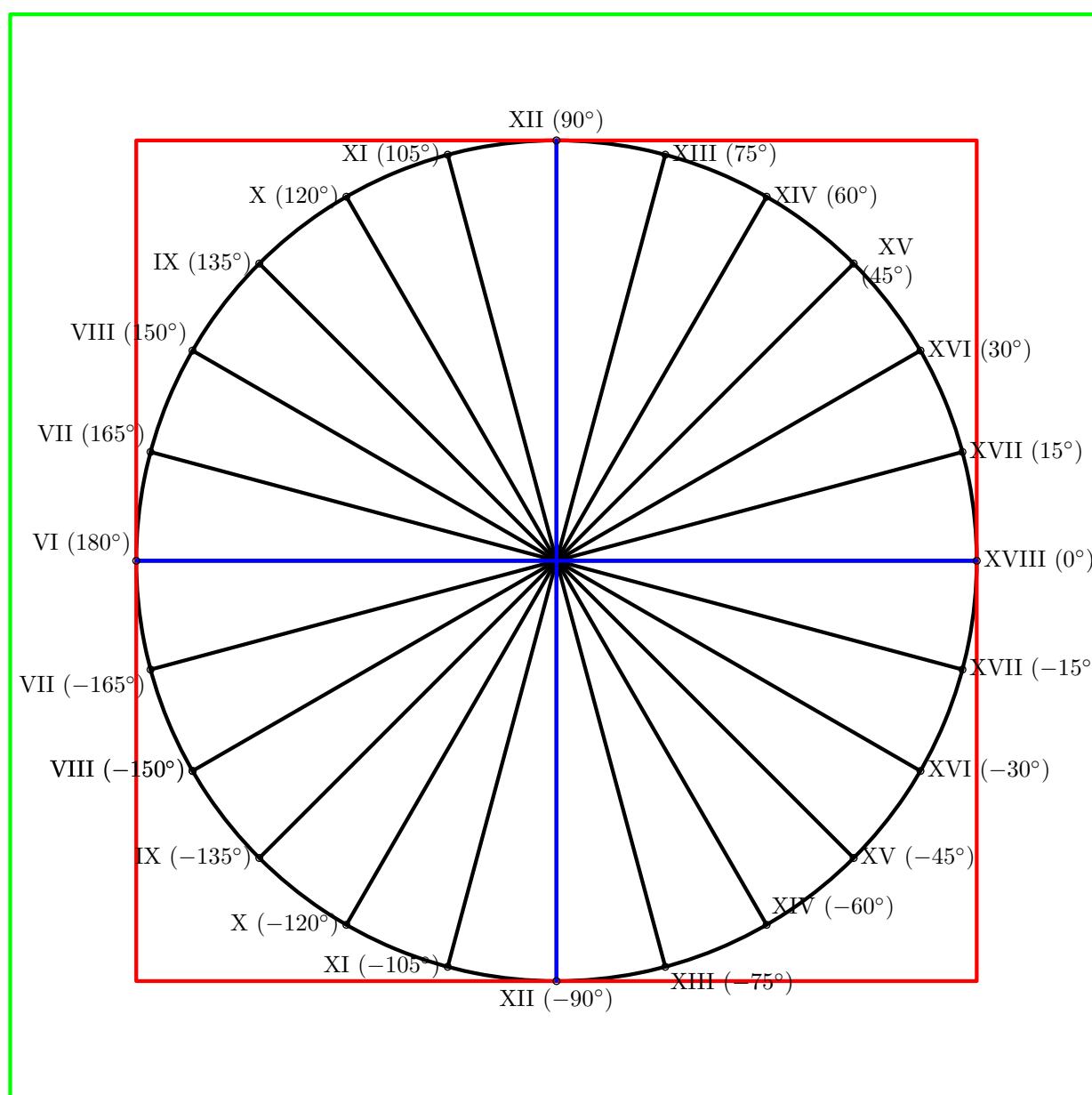
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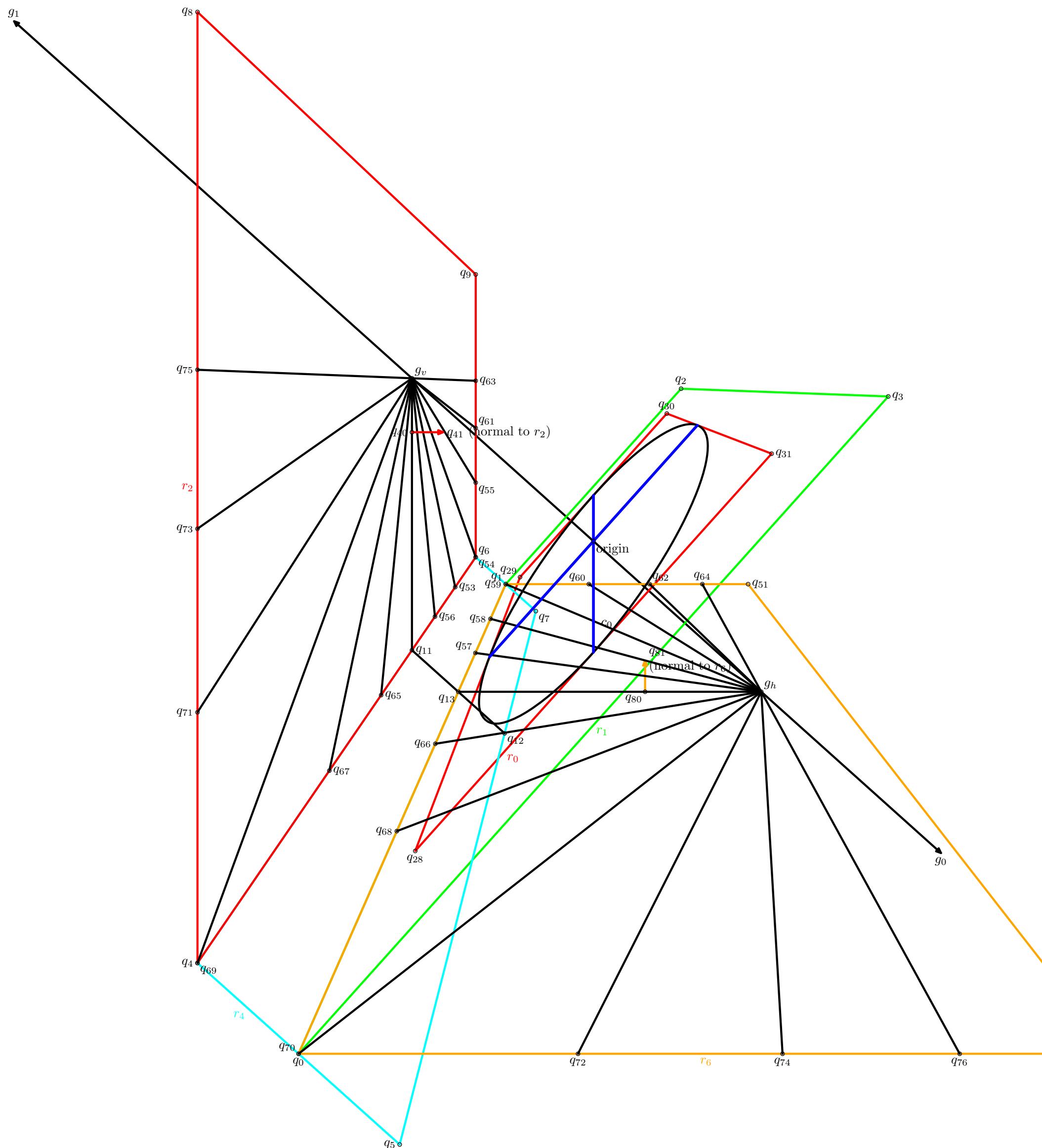
## Contents

Projection onto Equatorial Plane (Same for Any Latitude) . . . . .	1
Latitude 41° 54' N (Chicago, Illinois, USA)	
Perspective projection . . . . .	2
Vertical Dial, Facing Due South . . . . .	3
Horizontal Dial . . . . .	4
Latitude 51° 30' 28" N (London, UK)	
Perspective projection . . . . .	5
Vertical Dial, Facing Due South . . . . .	6
Horizontal Dial . . . . .	7
Latitude 51° 32' N (Göttingen, Germany)	
Perspective projection . . . . .	8
Vertical Dial, Facing Due South . . . . .	9
Horizontal Dial . . . . .	10



Parallel projection onto plane of equatorial dial (plane of  $c_0$ ,  $r_0$  and  $r_1$ )  
Same for any latitude

**Chicago, Illinois, USA** 41° 54' N, 87° 39' W

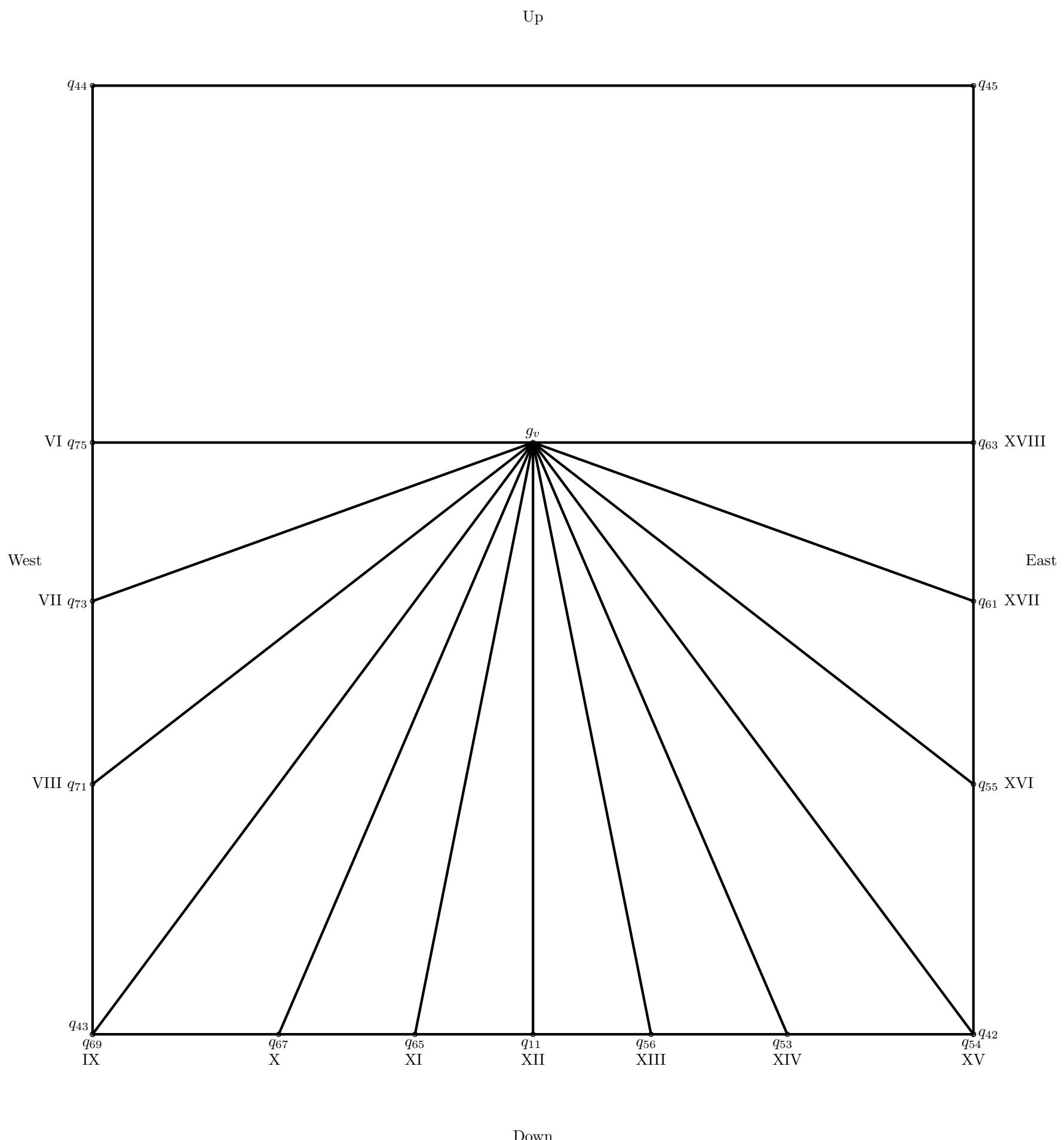


## Perspective projection

Latitude 41° 54' N (Chicago, Illinois, USA)

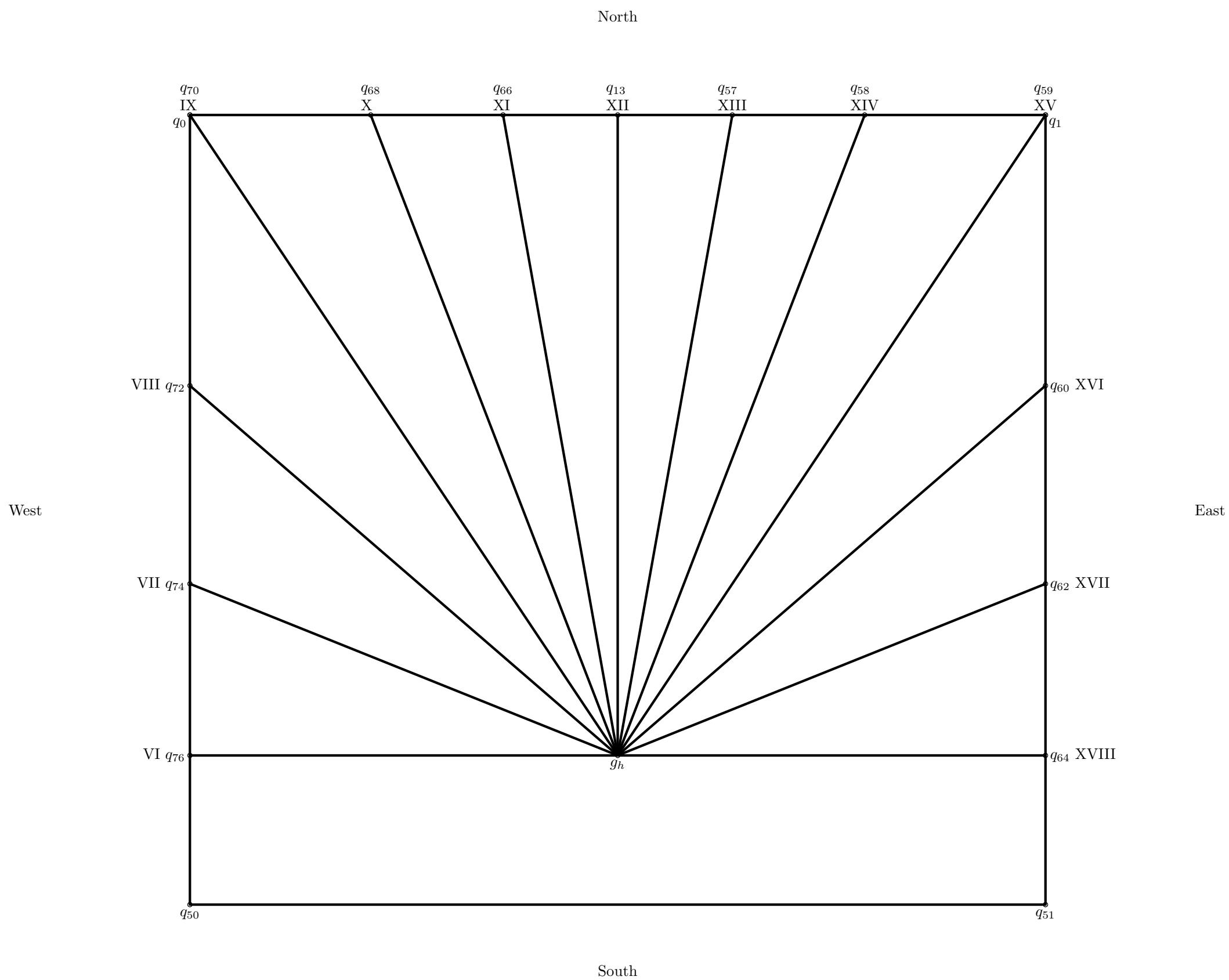
Focus: position =  $(0, 5, -12)$ , direction =  $(0, 5, 10)$ , distance = 10  
(dimensions in centimeters)

**Chicago, Illinois, USA**  $41^{\circ} 54' \text{ N}$ ,  $87^{\circ} 39' \text{ W}$

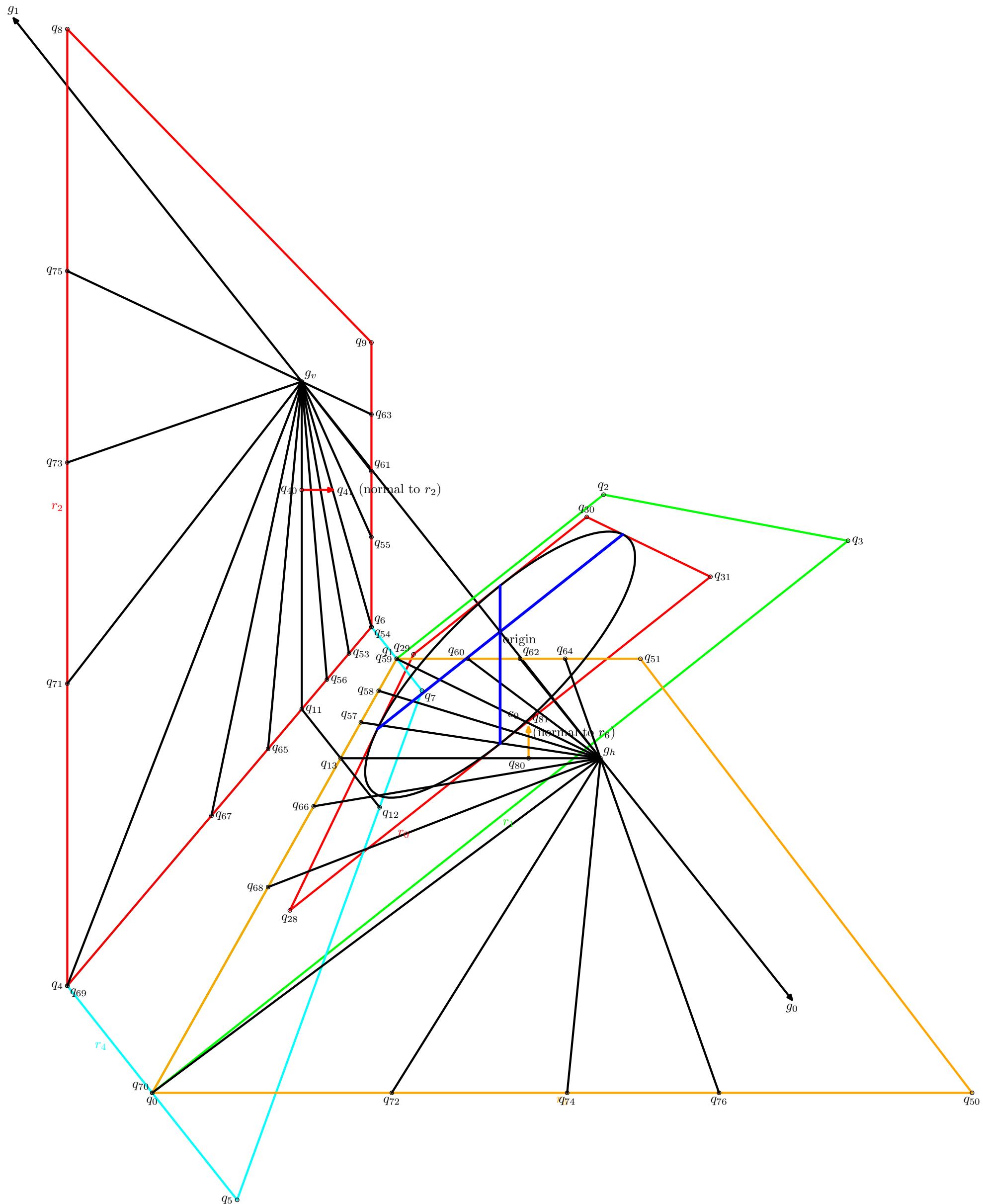


**Parallel projection onto the vertical plane** (plane of  $r_1$ )  
 Vertical dial facing due south  
 Latitude  $41^{\circ} 54' \text{ N}$  (Chicago, Illinois, USA)

**Chicago, Illinois, USA**  $41^\circ 54' \text{ N}$ ,  $87^\circ 39' \text{ W}$

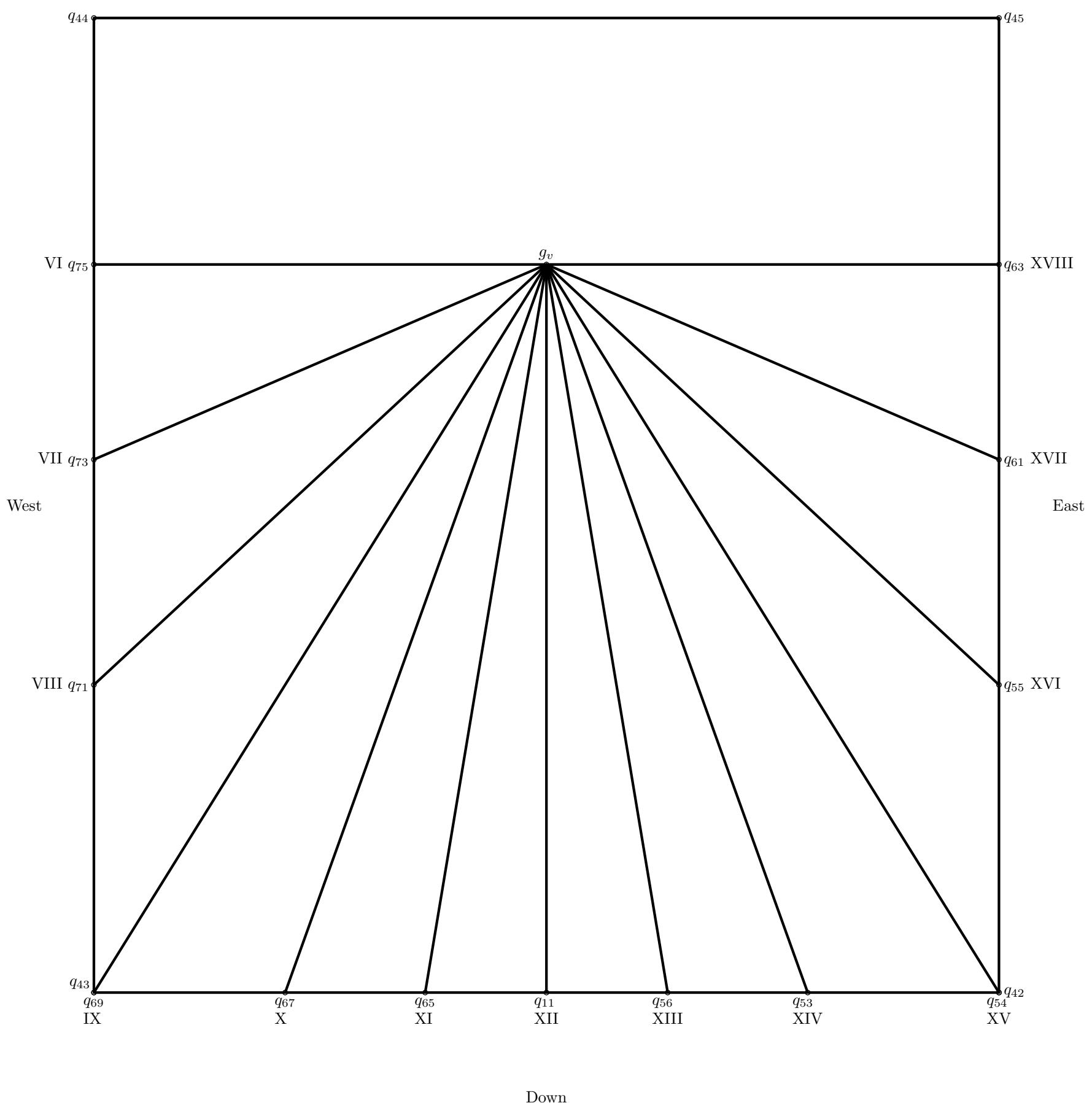


**Parallel projection onto the horizontal plane** (plane of  $r_6$ )  
 Horizontal dial  
 Latitude  $41^\circ 54' \text{ N}$  (Chicago, Illinois, USA)

London, UK  $51^{\circ} 30' 28''$  N,  $0^{\circ} 7' 41''$  W**Perspective projection**Latitude  $51^{\circ} 30' 28''$  N (London, UK)Focus: position =  $(0, 5, -12)$ , direction =  $(0, 5, 10)$ , distance = 10  
(dimensions in centimeters)

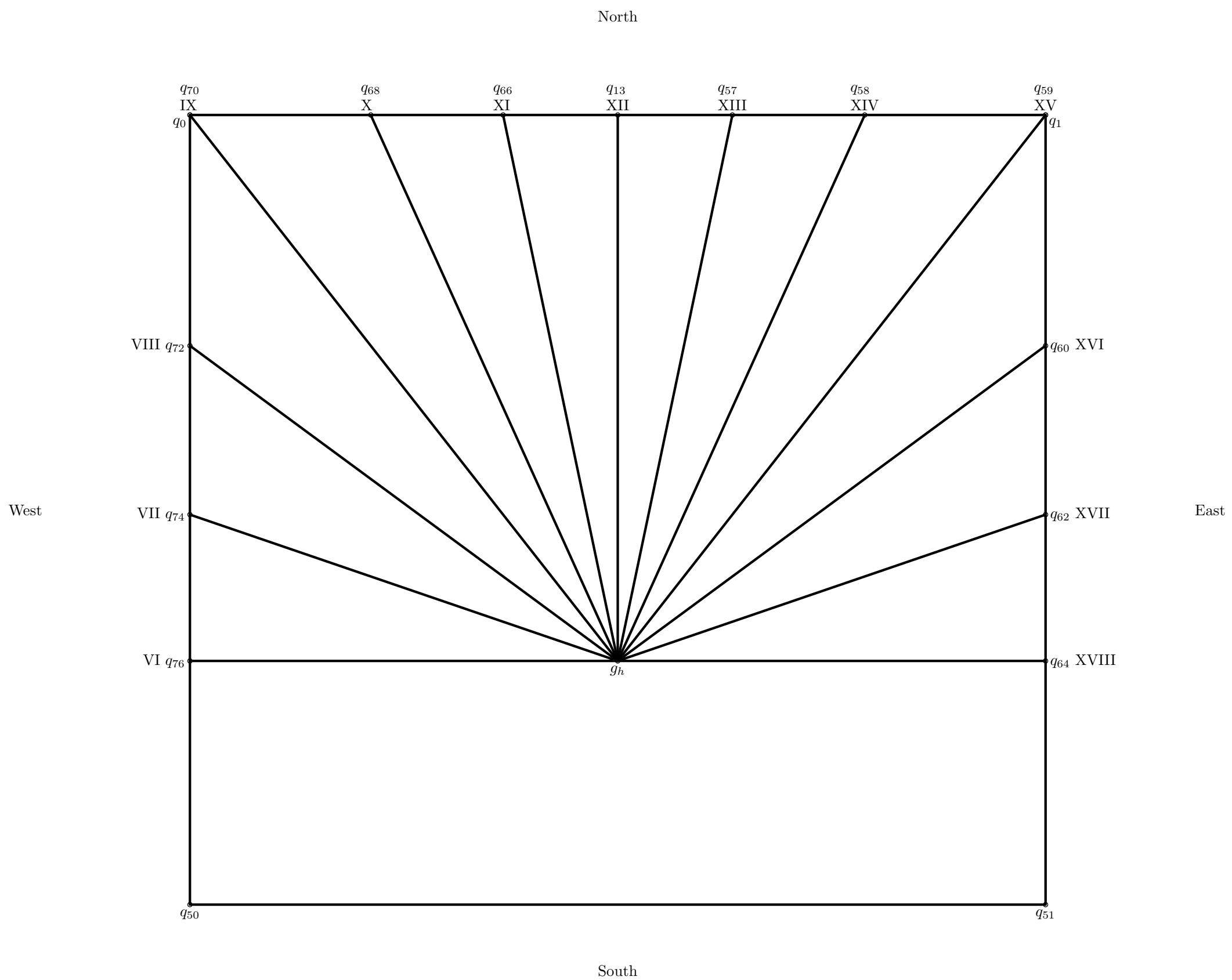
**London, UK**  $51^{\circ} 30' 28''$  N,  $0^{\circ} 7' 41''$  W

Up

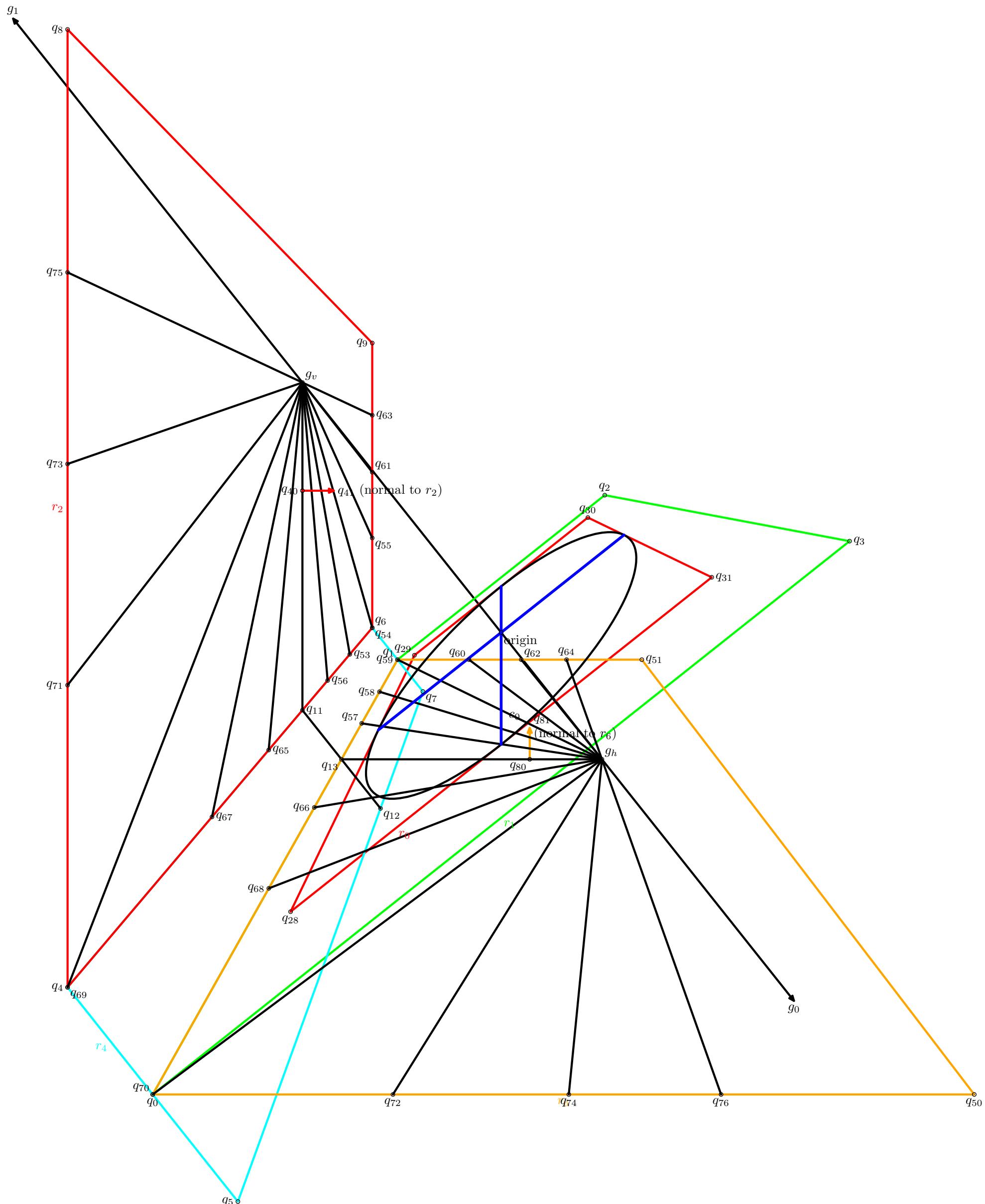


**Parallel projection onto the vertical plane** (plane of  $r_1$ )  
 Vertical dial facing due south  
 Latitude  $51^{\circ} 30' 28''$  N (London, UK)

**London, UK**  $51^{\circ} 30' 28''$  N,  $0^{\circ} 7' 41''$  W

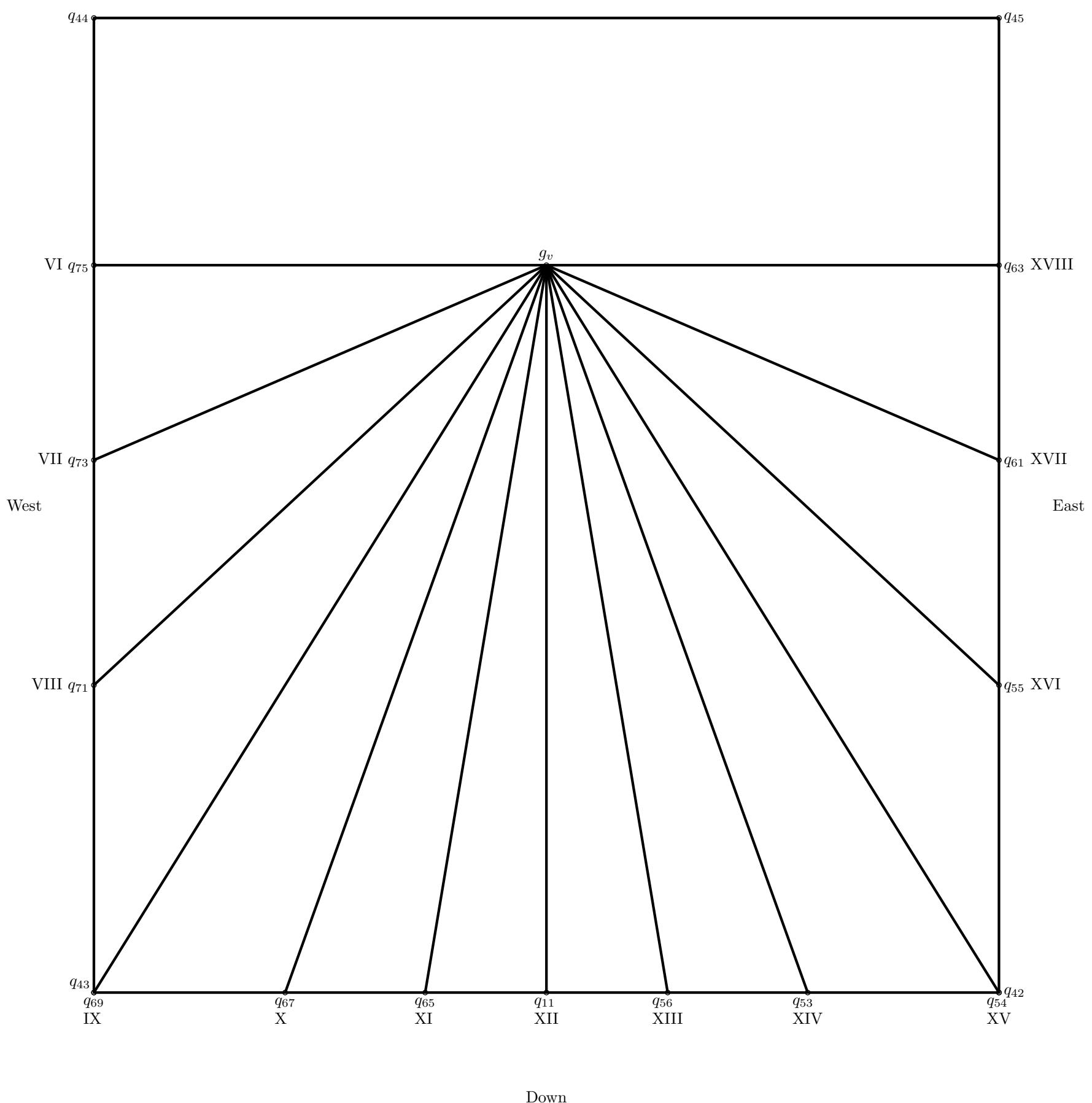


**Parallel projection onto the horizontal plane** (plane of  $r_6$ )  
Horizontal dial  
Latitude  $51^{\circ} 30' 28''$  N (London, UK)

Göttingen, Germany  $51^{\circ} 32' \text{ N}$ ,  $9^{\circ} 56' \text{ E}$ **Perspective projection**Latitude  $51^{\circ} 32' \text{ N}$  (Göttingen, Germany)Focus: position =  $(0, 5, -12)$ , direction =  $(0, 5, 10)$ , distance = 10  
(dimensions in centimeters)

Göttingen, Germany  $51^{\circ} 32' N, 9^{\circ} 56' E$

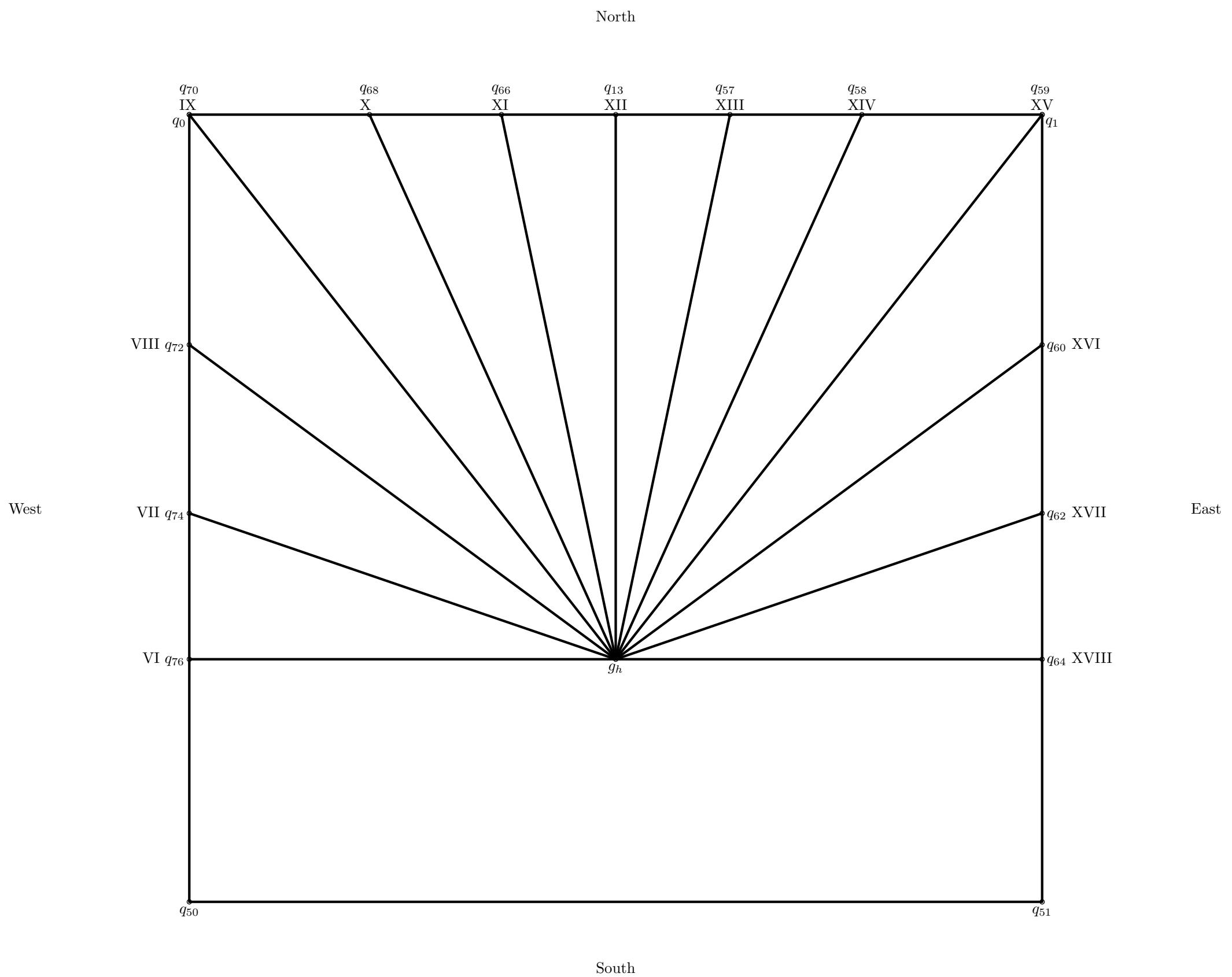
Up



Down

**Parallel projection onto the vertical plane** (plane of  $r_1$ )  
 Vertical dial facing due south  
 Latitude  $51^{\circ} 32' N$  (Göttingen, Germany)

Göttingen, Germany  $51^\circ 32' \text{ N}$ ,  $9^\circ 56' \text{ E}$



**Parallel projection onto the horizontal plane** (plane of  $r_6$ ).  
 Horizontal dial  
 Latitude  $51^\circ 32' \text{ N}$  (Göttingen, Germany)