

# Reflection Art: Determining viewpoints for catoptric anamorphoses

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## Motivation

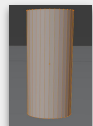
- Difficult to find good viewpoints



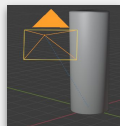
Anamorphic art by István Orosz

## Challenges

- What are good metrics
- How to combine metrics
- How to find candidate viewpoints



input



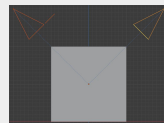
output

## Pipeline

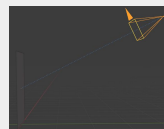
- Generate candidate viewpoints
- Calculate score based on metrics

### candidates

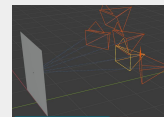
Brute-force



vertexes



faces

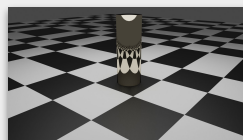


hsphere

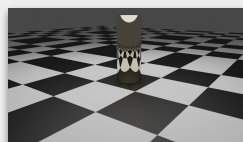
### metrics



Object area



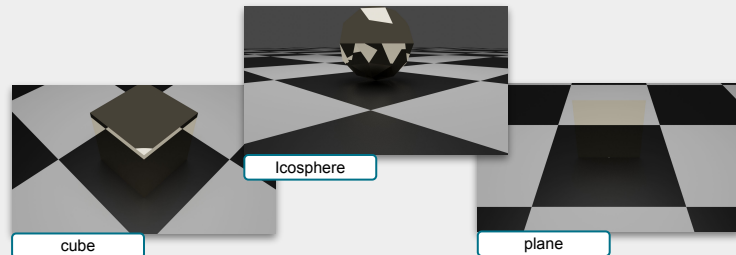
Surface area



Total area

## Results

- Possible to find optimal viewpoints for differing mirrors and metrics



## Conclusion

- Total area metric works well.
- Hsphere method finds scores from 89 to 96% of the brute-force solution

## Future work

- Using candidates with equal scores to detect symmetry.
- New ways of combining metrics
- Different metrics (distance)
- Different candidate viewpoint generation methods