Observational Techniques: Eva Kuipers

Master in Astronomy and Astrophysics
August 2023.

1. SED report: You obtain a relatively low uncertainty on the obtained E(B-V), but still your minimal χ^2 is large (see Fig. 5) as you indeed discuss in section 6. What would you conclude from that? Is that not a contradiction? You used the Monte-Carlo approach to quantify the uncertainty. What assumptions do you adopt for that and are these justified?

2. SED report: In your conclusions you write that you would take data from more accurate catalogues as to lower the minimal χ^2 value. But is that the only possibility?

3. SED report: You obtained a reddening of E(B-V) = 0.074. This is the total line-of-sight reddening which is partly interstellar, but also partly circumstellar. Are those two separable?

4. SED report: Can you use the distance modulus to the SMC (18.9 magn) to obtain the luminosity of your object, just from the V-band magnitude (m(v) = 13.25 mean magn.) and the derived properties of your star? How does this compare to the value you found?

5. SED report: A typical dust driven wind has an outflow velocity of 10 to 15 km/s. How can you use this information to estimate the age of the circumstellar dust around your object. What can you conclude from that?

6. SED report: When you re-read the report now, what would you do differently? List maybe 3 changes that could make your report better.

7. HERMES report: Wavelength stability is not the same as spectral resolution. Can you explain the difference. How does your stability determination compares to a spectral resolution element and what can you conclude from that? You call the night 'highly stable' in your report because the measures shifts are smaller than 0.1 km/s. But what do you mean by this?

8. HERMES report: The total efficiency of the combined telescope and spectrograph assembly is not very high. This is also given by the ETC.

Would you be able to suggest possible improvements to the design in order to boast the efficiency, if this is still possible?

9. HERMES report: The analyses of the efficiency (figures 7-9) is not too clear to me. Can you explain me what you mean with 'efficiency' in these figures and that should I conclude from these figures?

10. HERMES report: When you re-read the report now, what would you do differently? List maybe 3 changes that would make your report better.

11. The questions on interferometry is on a separate page.

Observational Techniques: [redacted]

Master in Astronomy and Astrophysics
January 2023.

1. SED report: You obtain a relatively low uncertainty on the obtained E(B-V), but still your minimal χ^2 is large (1794). Is that not in contradiction? What would you conclude from that? You discuss this briefly in section 8 but you claim it that it may be due to the undertain effective temperature of the star. Can you elaborate on this? You used the Monte-Carlo approach to quantify the uncertainty. What assumptions do you adopt for that and are these justified?

2. SED report: You obtained a reddening of E(B-V)=0.76. This is the total line-of-sight reddening which is partly interstellar, but also partly circumstellar. Are those two separable?

3. SED report: On the reddening you obtained a different value, dependent on the method you used to determine the error on the datapoint. Can you elaborate on this? What is the physical difference?

4. SED report: Can you use the distance modulus to the LMC (18.5 magn) to obtain the luminosity of your object, just from the V-band magnitude (m(v) = 15.7 mean magn.) and the derived properties of your star? How does this compare to the value you found?

5. SED report: A typical dust driven wind has an outflow velocity of 10 to 15 km/s. How can you use this information to estimate the age of the circumstellar dust around your object. What can you conclude from that?

6. SED report: When you re-read the report now, what would you do differently? List maybe 3 changes that could make your report better.

7. HERMES report: Wavelength stability is not the same as spectral resolution. Can you explain the difference? How does your stability determination compares to a spectral resolution element and what can you conclude from that?

8. HERMES report: The total efficiency of the combined telescope and spectrograph assembly is not very high. This is also given by the ETC. Would you be able to suggest possible improvements to the design in order to boast the efficiency, if this is still possible?

9. HERMES report: When you re-read the report now, what would you do differently? List maybe 3 changes that would make your report better.

10. The questions on interferometry is on a separate page.

Observational Techniques: [redacted]

Master in Astronomy and Astrophysics
January 2023.

1. SED report: You obtain a very low uncertainty on the obtained E(B-V), but still your minimal χ^2 is quite large (46). Is that not in contradiction? What would you conclude from that? You used the Monte-Carlo approach to quantify the uncertainty. What assumptions do you adopt for that and are these justified?

2. SED report: You obtained a reddening of E(B-V)=0.46. This is the total line-of-sight reddening which is partly interstellar, but also partly circumstellar. Are those two separable?

3. SED report: You differentiate between observed luminosity and photospheric luminosity. Can you explain the difference?

4. SED report: Can you use the distance modulus to the LMC (18.5 magn) to obtain the luminosity of your object, just from the V-band magnitude (m(v) = 15.7 mean magn.) and the derived properties of your star? How does this compare to the value you found?

5. SED report: A typical dust driven wind has an outflow velocity of 10 to 15 km/s. How can you use this information to estimate the age of the circumstellar dust around your object. What can you conclude from that?

6. SED report: When you re-read the report now, what would you do differently? List maybe 3 changes that could make your report better.

7. HERMES report: Wavelength stability is not the same as spectral resolution. Can you explain the difference? How does your stability determination compares to a spectral resolution element and what can you conclude from that?

8. HERMES report: Figure 4 is a bit unclear as the theoretical curve, seem to be the same for all panels. Can you explain what this figure represents?

9. HERMES report: The total efficiency of the combined telescope and spectrograph assembly is not very high. This is also given by the ETC. Would you be able to suggest possible improvements to the design in order to boast the efficiency, if this is still possible?

10. HERMES report: When you re-read the report now, what would you do differently? List maybe 3 changes that would make your report better.

11. The questions on interferometry is on a separate page.

Observational Techniques: [redacted]

Master in Astronomy and Astrophysics
January 2023.

1. SED report: You obtain a relatively low uncertainty on the obtained small E(B-V), but still your minimal χ^2 is quite large (100 to 459 dependent on your sigmas). Is that not in contradiction? What would you conclude from that? You used the Monte-Carlo approach to quantify the uncertainty. What assumptions do you adopt for that and are these justified?

2. SED report: You obtained a reddening of E(B-V)=0.07. This is the total line-of-sight reddening which is partly interstellar, but also partly circumstellar. Are those two separable? Is this low redenning not a surprise, given the large IR excess?

3. SED report: Can you use the distance modulus to the LMC (18.5 magn) to obtain the luminosity of your object, just from the V-band magnitude (m(v) = 14.5 mean magn.) and the derived properties of your star? How does this compare to the value you found?

4. SED report: A typical dust driven wind has an outflow velocity of 10 to 15 km/s. How can you use this information to estimate the age of the circumstellar dust around your object. What can you conclude from that?

5. SED report: When you re-read the report now, what would you do differently? List maybe 3 changes that could make your report better.

6. HERMES report: Wavelength stability is not the same as spectral resolution. Can you explain the difference? How does your stability determination compares to a spectral resolution element and what can you conclude from that?

7. HERMES report: On the efficiency. For one star, you obtain much higher values than what was predicted. Could you think on a physical reason why this would be the case?

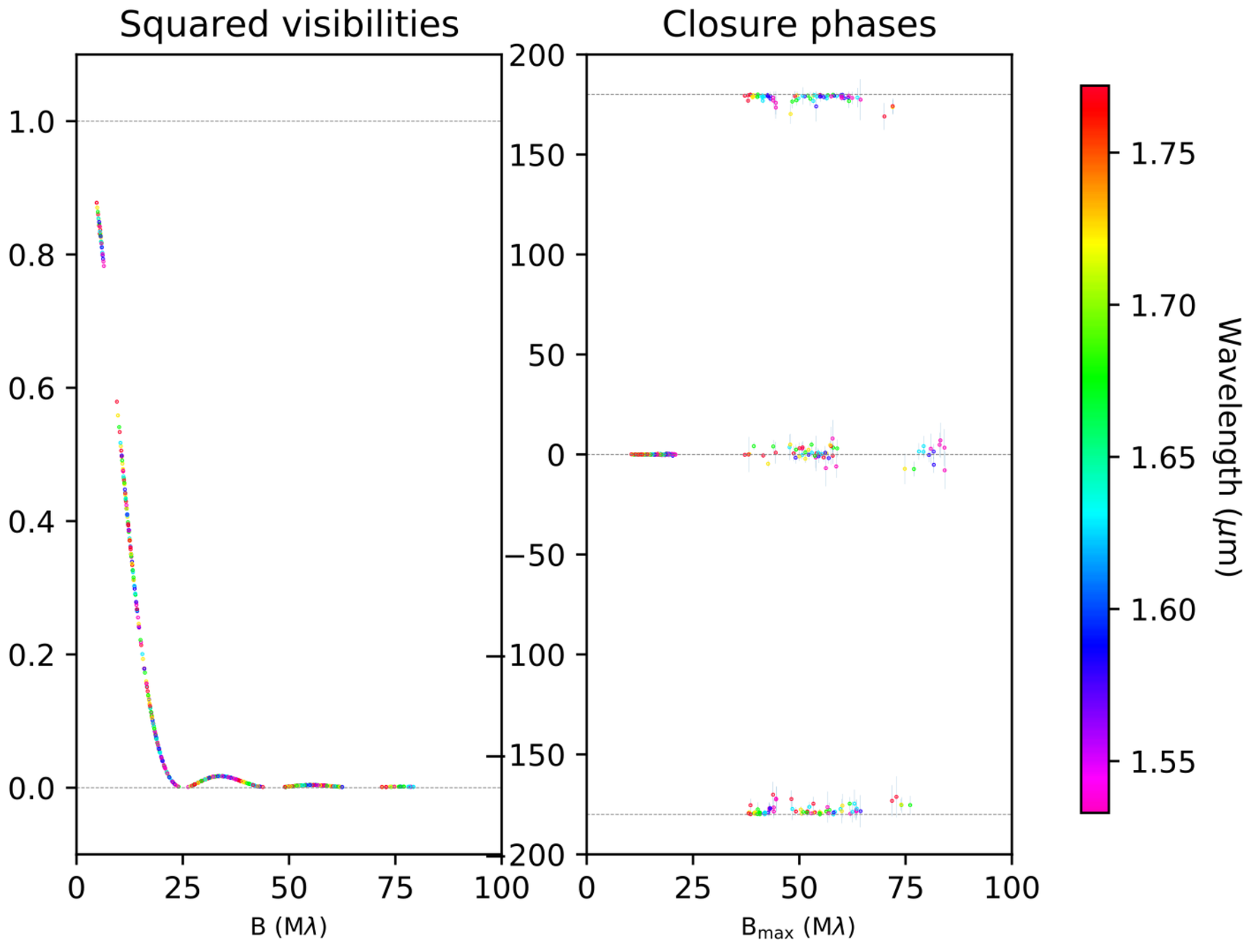
8. HERMES report: The total efficiency of the combined telescope and spectrograph assembly is not very high. This is also given by the ETC. Would you be able to suggest possible improvements to the design in order to boast the efficiency, if this is still possible?

9. HERMES report: When you re-read the report now, what would you do differently? List maybe 3 changes that would make your report better.

10. The questions on interferometry is on a separate page.

Please describe the dataset:

- What is the Zernicke-Van Cittert theorem? What is the visibility?
- What can we deduce from the data?
- What is, in your opinion, the target looking like?



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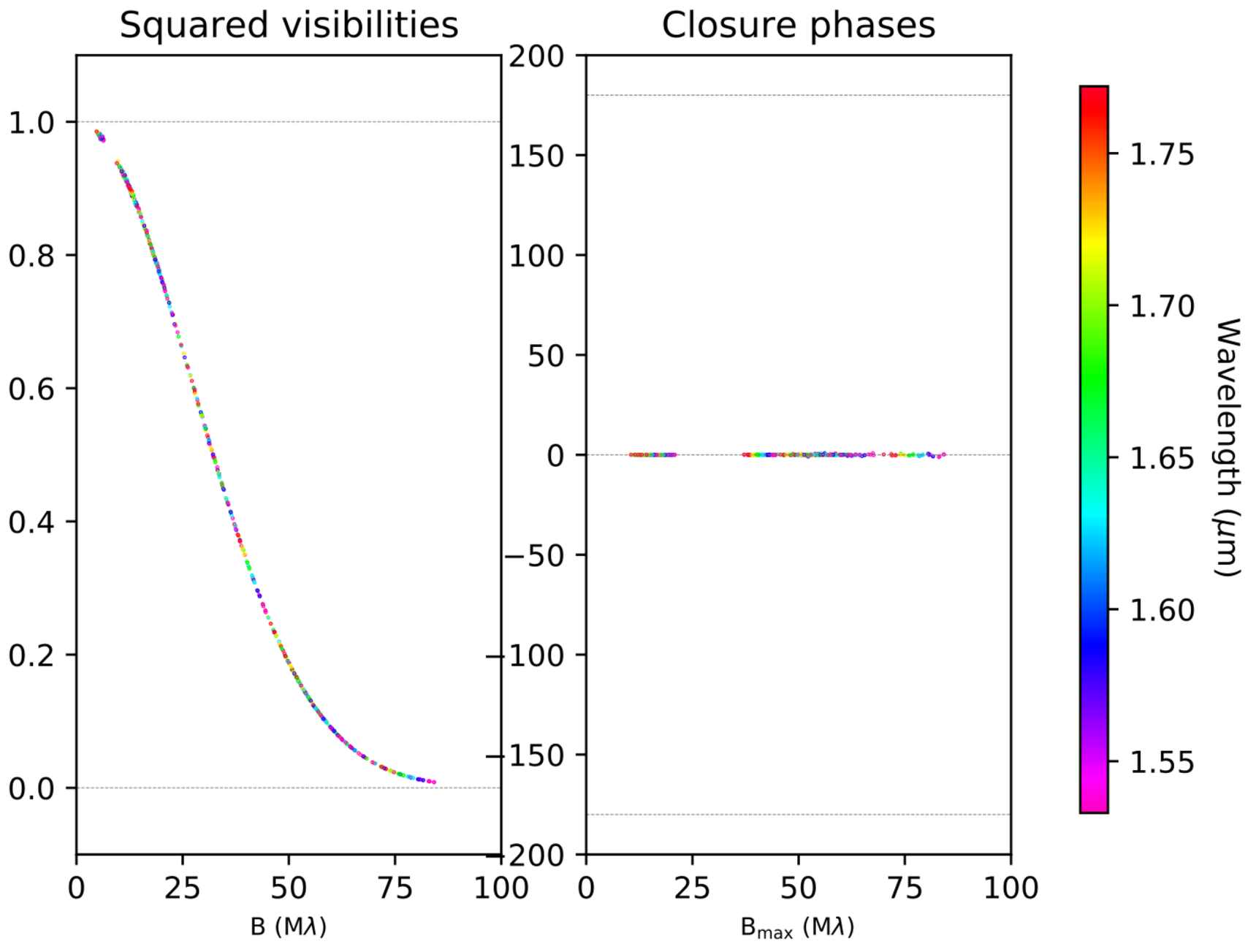
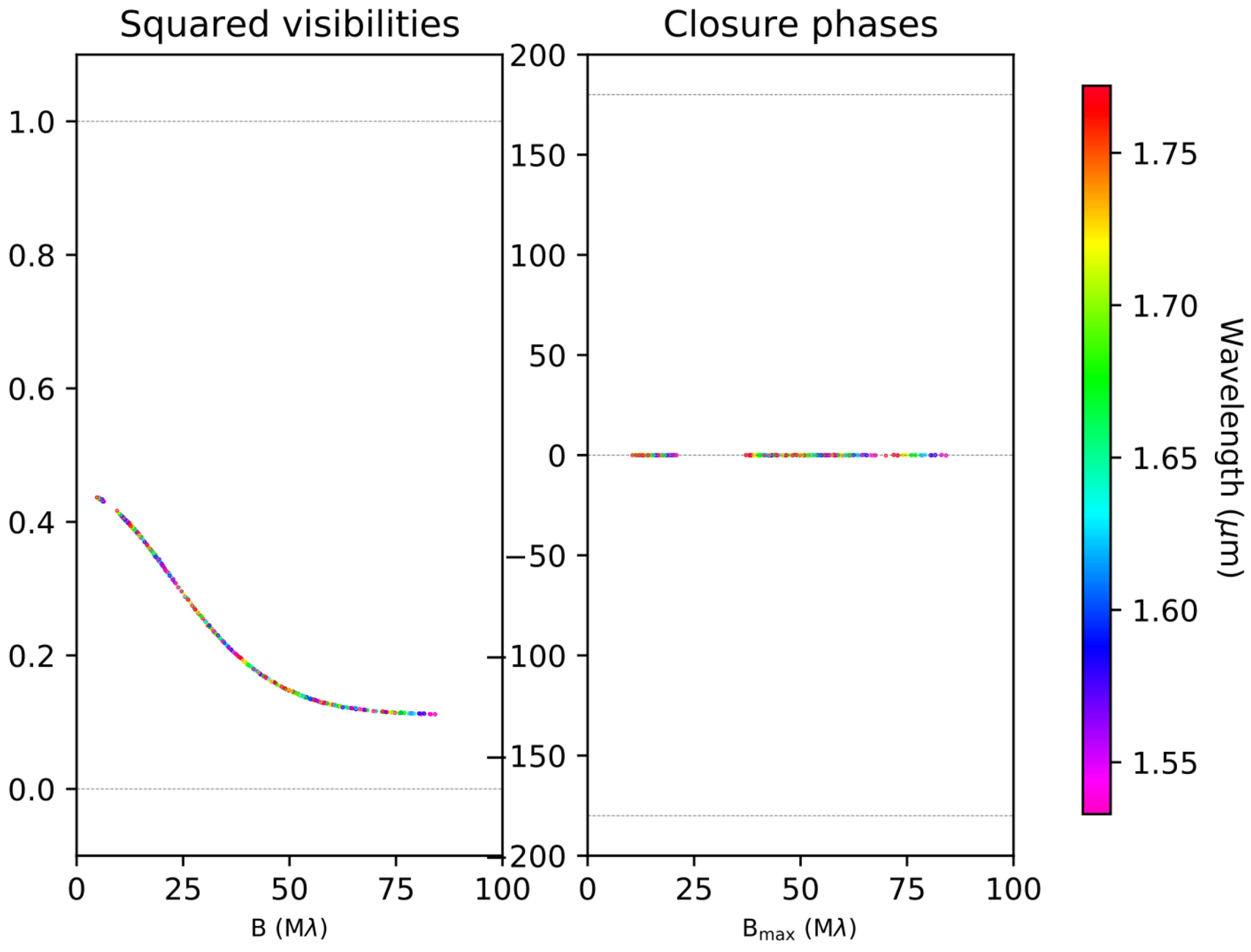


Please describe the dataset:

- What is the temporal coherence of fringes?
- What is the spatial coherence of the fringes?
- What can we deduce from the data?
- What is, in your opinion, the target looking like?



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