The referees provided a wonderful collection of comments, suggestions, and references that I feel have enhanced the discussion of topics in the paper. I truly thank them for their reviews. I will address their comments in the order they listed.

The paper has increased from 35 to 45 pages due to adding the suggestions of the referees. So, the page numbers no longer match up with the original submission. I tried to keep the amount added as minimal as possible, but to respond to the referees’ comments meant that adding discussion and references were unavoidable.

**Response to Referee 1.**

1. I added a paragraph for each of determinantal point processes and free probability in pages 3 and 4.

2. The description of $L$ is added on page 13 together with a sketch of the proof of display (16).

3. I moved that paragraph (originally on page 14) to a new Section 5.2.5 on page 17. I expanded this new section to a full page to discuss the various approaches to the asymptotics of extreme eigenvalues, also giving some idea of the proofs involved.

4. I added the suggested references on page 29.

5. The referee’s third sentence is not complete. The sentence reads: “… a remark on the connection of this result to might have been useful.” I wish I knew what the connection referred to. I added a paragraph on page 33 that referred to the work of Johansson, as suggested.

6. I moved the paragraph to page 32 as Remark 7. I also added a sentence on page 11 at the end of the second paragraph relating free probability to Wigner’s semicircle law, as suggested, together with the reference to Anderson, Guionnet, and Zeitouni.

**Response to Referee 2.**

Major comments

1. This comment is a combination of several items.

   First, in response to the referee’s comment about scaling, on page 7, I revised my descriptions of the three Gaussian ensembles, the GOE, GUE, and GSE.
Second, I added a new paragraph on page 8 to discuss what is a Wigner matrix. This incorporates the paragraph on the original page 8 and which involved displays (5), (6), and (7).

Third, Remark 1 has been extended with several references.

Fourth, I added a reference to Wigner in Remark 2.

Fifth, Remark 3 has been extended to take into account the different definitions in the literature of Wigner’s semicircle law.

Sixth, I made “A Spiked Covariance Matrix” into its own Section 5.3 and expanded it, dividing the discussion by the real and complex cases. You are correct about the need for a Gaussian assumption, which I have incorporated into the text. I hope I have cleared up any confusion.

2. I added a reference to Wigner in Remark 2.

Remark 3 was expanded with references.

References were added on page 16 (original page 13) to the discussion on display (27) (original display (28)).

References were added on page 20 (original page 16) to the discussion on display (34) (original display (35)).

References were added on page 24 (original page 18) to the discussion on display (47) (original display (47)).

3. I moved the paragraph on original page 14 to a new Section 5.2.5 on page 17. This section expanded upon the original discussion with many references and additional discussion of the topic of convergence of extreme eigenvalues to the respective support points. I also added the suggested reference to Livshyts et al.

4. I turned subsubsection 5.2.5 (original page 14) on a spiked covariance matrix into its own subsection 5.3 on page 19, and divided its contents into the real and complex cases for better clarification. All suggested references added.

5. I added a new section on page 21 that I called “Other approaches.” This takes care of the Bayesian approach on the original page 17, as well as a discussion of hypothesis testing, and adds further discussion that incorporates suggested and other references.

6. I changed the scaling of the GOE, GUE, and GSE on page 7 (original page 6). The RMT literature is very confusing on this issue with different references using different scaling and different definitions of Wigner’s semicircle law as a result, and I have tried to show this on Remark 3 on page 12.
Minor comments/typos

1. I have added many references to the paragraph on page 5 (original page 4) that addresses the universality conjecture.

2. Typo. The text on page 5 (original page 4) should have said Wishart, not Wigner. I have tried to make the statement more precise.

3. I have removed the word “random” as suggested on page 6 (original page 5).

4. I have defined the complex multivariate Gaussian distribution on page 6 (originally stated on page 18).

5. I added the symmetry constraint on page 8 (original page 6) to the description of the three types of ensembles.


7. I included the comment on repulsion of eigenvalues as suggested on page 8.

8. I removed the word “symmetric” and expanded Remark 3 on page 12, adding a discussion of a rescaled version of Wigner’s semicircle law that shows the different versions of that law that appear in the RMT literature.

9. I defined the $\beta$-Wishart-Laguerre ensemble on page 15 (original discussion on page 13).

10. I reworded (and expanded) the discussion on page 16 (original page 13) on the value of using zonal polynomials to take into consideration the comments, and added references.

11. I changed the wording regarding the rescaling of the spiked covariance model on page 19 (original page 15) as per the suggestion.


13. I changed the wording on page 22 (original page 16) regarding the use of PCA to take the comment into account and added some discussion.

14. I added the display number to identify the statement on page 23 (original page 17).

15. A reference to Johnstone and Ma is added on page 27 (original page 21) as to why $n + 1$ should be even. Also added is a discussion of what Johnstone and Ma proved.
16. Paragraph on phase transition following Remark 6 on page 31 (original page 24) has been removed and integrated with the text on pages 19 and 20 (original pages 15 and 16).

17. I changed subsection 6.5 on page 32 (original page 27) heading to read “Some Applications of Random Matrix Theory” rather than “Applications of the Tracy–Widom Laws.” That takes care of the relevance of Example 3.

18. I added the reference of Anderson et al. to textbook references on page 36 (original page 30) as suggested.

19. There were quite a few missing references, which I have added as appropriate.

One Further Addition

1. On page 11, I added two methods to prove Wigner’s semicircle law.