Corrections for "A Supersymmetry Primer", version 3

Please note that version 3 is now hopelessly obsolete; you should be reading version 7 (January 2016) instead!

The following is a list of known corrections to `hep-ph/9709356 v3`, dated April 7, 1999. If you have a different arXiv version, you can find the corresponding list of corrections at:
`http://www.niu.edu/spmartin/primer`
I do not maintain errata for the World Scientific "Perspectives on Supersymmetry" chapter (non-arXiv) versions.
Please send any further corrections or suggestions to `spmartin@niu.edu`.
This list was last updated: April 26, 2012.

• Section 1, eq. (1.2): The numerical coefficient of the logarithmic term should not be 6. In fact, it should be 12 for the real component of the complex field H and 4 for the imaginary part of H. This difference is due to the fact that the fermion mass necessarily breaks the electroweak symmetry, so one can't really talk about the logarithmic correction to m_H^2 as if it were universal. The $\Lambda_{\rm UV}^2$ correction *is* the same for the real and imaginary parts of H, however, and is correct as given. (Thanks to Shufang Su.)
• Section 3.2, eq. (3.46): The indices ij should be lowered on W^{*ij}.
• Section 5.1, third sentence of the second full paragraph after eq. (5.3): There are five, not nine, more scalar quartic interactions proportional to y_t^2 besides the three shown in Figure 8. (Thanks to Bob McElrath and Keith Thomas.)
• Section 5.2, third sentence of the first full paragraph after eq. (5.8): Instead of minutes or hours, the proton lifetime would actually be a tiny fraction of a second if all components of λ' and λ'' were of order unity. (Thanks to John Terning.)
• Section 5.2, fourth sentence of the first full paragraph after eq. (5.8): The list of proton decay final states is misleading. Using the s-channel squark-exchange Feynman diagram in Figure 11, only the final states $e^+\pi^0$ and $\mu^+\pi^0$ and $\bar\nu\pi^+$ and $\bar\nu K^+$ can be obtained at tree-level. However, the other final states e^+K^0 and μ^+K^0 and $\nu\pi^+$ and νK^+ can be obtained by tree-level t-channel squark-exchange diagrams involving the λ' and λ'' couplings. (Note that I also sloppily did not distinguish between neutrinos and antineutrinos in the original text. The cases with neutrinos in the final state rely on left-right squark mixing.)
(Thanks to Herbi Dreiner.)
• Section 6.1, eqs. (6.4) and (6.5): There are three minus sign errors. These equations should read:

$$V = -\frac{1}{2}D^2 - \kappa D - gD\sum_i q_i\phi^{*i}\phi_i$$
$$D = -\kappa - g\sum_i q_i\phi^{*i}\phi_i$$

• Section 6.3, second full sentence after eq (6.25): $\langle F_X\rangle$ should actually be: $\sqrt{\langle F_X\rangle}$. (Thanks to Verónica Sanz.)
• Section 6.4, third full sentence after eq. (6.47): "squared masses $y_i\langle S\rangle$" should read "squared masses $|y_i\langle S\rangle|^2$". (Thanks to Verónica Sanz.)
• Section 7.1, eq. (7.23): The coefficient of $g_1^2|M_1|^2$ should be $-\frac{6}{5}$, not $-\frac{3}{5}$. (Thanks to Scott Thomas and Gudrun Hiller.)
• Section 7.2, eq. (7.41): The factor of $\sin^4\beta$ should actually be $\sin^2\beta\cos^2\alpha$. However, in the usual decoupling limit of $m_{A^0} \gg m_Z$, then $\cos\alpha \approx \sin\beta$ and eq. (7.41) becomes correct as written. (Thanks to John Terning and Gudrun Hiller.)