

LSC February 2017 author list—LIGO-M1700032
8/24/2017. CQG style

B P Abbott¹, R Abbott¹, T D Abbott², K Ackley³, C Adams⁴,
P Adesso⁵, R X Adhikari¹, V B Adya⁶, C Affeldt⁶,
M Afrough⁷, B Agarwal⁸, M Agathos⁹, N Aggarwal¹⁰,
O D Aguiar¹¹, A Ain¹², P Ajith¹³, B Allen^{6,14,15}, G Allen⁸,
P A Altin¹⁶, A Ananyeva¹, S B Anderson¹, W G Anderson¹⁴,
S Appert¹, K Arai¹, M C Araya¹, J S Areeda¹⁷, K G Arun¹⁸,
G Ashton⁶, M Ast¹⁹, S M Aston⁴, P Aufmuth¹⁵, C Aulbert⁶,
K AultONeal²⁰, A Avila-Alvarez¹⁷, S Babak²¹, S Bae²²,
P T Baker^{23,24}, S W Ballmer²⁵, S Banagiri²⁶, J C Barayoga¹,
S E Barclay²⁷, B C Barish¹, D Barker²⁸, B Barr²⁷, L Barsotti¹⁰,
J Bartlett²⁸, I Bartos²⁹, R Bassiri³⁰, J C Batch²⁸, C Baune⁶,
B Bécsy³¹, C Beer⁶, A S Bell²⁷, B K Berger¹, G Bergmann⁶,
C P L Berry³², J Betzwieser⁴, S Bhagwat²⁵, R Bhandare³³,
I A Bilenko³⁴, G Billingsley¹, C R Billman³, J Birch⁴,
R Birney³⁵, O Birnholtz⁶, S Biscans¹⁰, A Bisht¹⁵, C Biwer²⁵,
J K Blackburn¹, J Blackman³⁶, C D Blair³⁷, D G Blair³⁷,
R M Blair²⁸, O Bock⁶, N Bode⁶, A Bohe²¹, R Bork¹, S Bose^{38,12},
P R Brady¹⁴, V B Braginsky^{*34}, J E Brau³⁹, M Brinkmann⁶,
P Brockill¹⁴, J E Broida⁴⁰, A F Brooks¹, D A Brown²⁵,
D D Brown³², N M Brown¹⁰, S Brunett¹, C C Buchanan²,
A Buikema¹⁰, A Buonanno^{21,41}, R L Byer³⁰, M Cabero⁶,
L Cadonati⁴², C Cahillane¹, J Calderón Bustillo⁴²,
T A Callister¹, J B Camp⁴³, K C Cannon⁴⁴, H Cao⁴⁵, J Cao⁴⁶,
C D Capano⁶, S Caride⁴⁷, M F Carney⁴⁸, S Caudill¹⁴,
M Cavaglia⁷, C B Cepeda¹, S J Chamberlin⁴⁹, M Chan²⁷,
S Chao⁵⁰, P Charlton⁵¹, D Chatterjee¹⁴, B D Cheeseboro^{23,24},
H Y Chen⁵², Y Chen³⁶, H-P Cheng³, T Chmiel⁴⁸, H S Cho⁵³,
M Cho⁴¹, J H Chow¹⁶, N Christensen⁴⁰, Q Chu³⁷, A J K Chua⁹,
A K W Chung⁵⁴, S Chung³⁷, G Ciani³, C E Cirelli³⁰, F Clara²⁸,
J A Clark⁴², C Cocchieri⁷, C G Collette⁵⁵, L R Cominsky⁵⁶,
M Constancio Jr.¹¹, S J Cooper³², P Corban⁴, T R Corbitt²,
K R Corley²⁹, N Cornish⁵⁷, A Corsi⁴⁷, C A Costa¹¹,
M W Coughlin⁴⁰, S B Coughlin^{58,59}, S T Countryman²⁹,
P Couvares¹, P B Covas⁶⁰, E E Cowan⁴², D M Coward³⁷,
M J Cowart⁴, D C Coyne¹, R Coyne⁴⁷, J D E Creighton¹⁴,

T D Creighton⁶¹, J Cripe², S G Crowder⁶², T J Cullen¹⁷,
 A Cumming²⁷, L Cunningham²⁷, T Dal Canton⁴³,
 S L Danilishin^{15,6}, K Danzmann^{15,6}, A Dasgupta⁶³,
 C F Da Silva Costa³, I Dave³³, D Davis²⁵, E J Daw⁶⁴, B Day⁴²,
 S De²⁵, D DeBra³⁰, W Del Pozzo³², T Denker⁶, T Dent⁶,
 V Dergachev²¹, R T DeRosa⁴, R DeSalvo⁶⁵, J Devenson³⁵,
 R C Devine^{23,24}, S Dhurandhar¹², M C Díaz⁶¹, Z Doctor⁵²,
 F Donovan¹⁰, K L Dooley⁷, S Doravari⁶, I Dorrington⁵⁹,
 R Douglas²⁷, M Dovale Álvarez³², T P Downes¹⁴, M Drago⁶,
 R W P Drever^{#1}, J C Driggers²⁸, Z Du⁴⁶, J Duncan⁵⁸,
 S E Dwyer²⁸, T B Edo⁶⁴, M C Edwards⁴⁰, A Effler⁴,
 H-B Eggenstein⁶, P Ehrens¹, J Eichholz¹, S S Eikenberry³,
 R A Eisenstein¹⁰, R C Essick¹⁰, Z B Etienne^{23,24}, T Etzel¹,
 M Evans¹⁰, T M Evans⁴, M Factourovich²⁹, H Fair²⁵,
 S Fairhurst⁵⁹, X Fan⁴⁶, B Farr⁵², W M Farr³²,
 E J Fauchon-Jones⁵⁹, M Favata⁶⁶, M Fays⁵⁹, H Fehrmann⁶,
 J Feicht¹, M M Fejer³⁰, A Fernandez-Galiana¹⁰, E C Ferreira¹¹,
 R P Fisher²⁵, M Fletcher²⁷, H Fong⁶⁷, P W F Forsyth¹⁶,
 S S Forsyth⁴², Z Frei³¹, A Freise³², R Frey³⁹, E M Fries¹,
 P Fritschel¹⁰, V V Frolov⁴, P Fulda^{3,43}, M Fyffe⁴, H Gabbard⁶,
 M Gabel⁶⁸, B U Gadre¹², S M Gaebel³², J R Gair⁶⁹,
 M R Ganija⁴⁵, S G Gaonkar¹², S Gaudio²⁰, G Gaur⁷⁰,
 V Gayathri⁷¹, N Gehrels^{†43}, D George⁸, J George³³,
 L Gergely⁷², S Ghonge⁴², Abhirup Ghosh¹³,
 Archisman Ghosh¹³, J A Giaime^{2,4}, K D Giardina⁴, K Gill²⁰,
 L Glover⁶⁵, E Goetz⁶, R Goetz³, S Gomes⁵⁹, G González²,
 A Gopakumar⁷³, M L Gorodetsky³⁴, S E Gossan¹, C Graef²⁷,
 A Grant²⁷, S Gras¹⁰, C Gray²⁸, A C Green³², H Grote⁶,
 S Grunewald²¹, X Guo⁴⁶, A Gupta⁴⁹, M K Gupta⁶³,
 K E Gushwa¹, E K Gustafson¹, R Gustafson⁷⁴, B R Hall³⁸,
 E D Hall¹, G Hammond²⁷, M Haney⁷³, M M Hanke⁶,
 J Hanks²⁸, C Hanna⁴⁹, M D Hannam⁵⁹, O A Hannuksela⁵⁴,
 J Hanson⁴, T Hardwick², G M Harry⁷⁵, I W Harry²¹,
 M J Hart²⁷, C-J Haster⁶⁷, K Haughian²⁷, J Healy⁷⁶,
 M C Heintze⁴, M Hendry²⁷, I S Heng²⁷, J Hennig²⁷, J Henry⁷⁶,
 A W Heptonstall¹, M Heurs^{6,15}, S Hild²⁷, K Holt⁴, D E Holz⁵²,
 P Hopkins⁵⁹, C Horst¹⁴, J Hough²⁷, E A Houston²⁷,
 E J Howell³⁷, Y M Hu⁶, E A Huerta⁸, B Hughey²⁰, S Husa⁶⁰,
 S H Huttner²⁷, T Huynh-Dinh⁴, N Indik⁶, D R Ingram²⁸,
 R Inta⁴⁷, H N Isa²⁷, M Isi¹, B R Iyer¹³, K Izumi²⁸, K Jani⁴²,
 S Jawahar⁷⁷, F Jiménez-Forteza⁶⁰, W W Johnson²,
 N K Johnson-McDaniel¹³, D I Jones⁷⁸, R Jones²⁷, L Ju³⁷,

J Junker⁶, C V Kalaghatgi⁵⁹, V Kalogera⁵⁸, S Kandhasamy⁴,
 G Kang²², J B Kanner¹, S Karki³⁹, K S Karvinen⁶,
 M Kasprzack², M Katolik⁸, E Katsavounidis¹⁰, W Katzman⁴,
 S Kaufer¹⁵, K Kawabe²⁸, D Keitel²⁷, A J Kembal⁸,
 R Kennedy⁶⁴, C Kent⁵⁹, J S Key⁷⁹, F Y Khalili³⁴, S Khan⁶,
 Z Khan⁶³, E A Khazanov⁸⁰, N Kijbunchoo²⁸, Chunglee Kim⁸¹,
 J C Kim⁸², W Kim⁴⁵, W S Kim⁸³, Y-M Kim^{53,81}, S J Kimbrell⁴²,
 E J King⁴⁵, P J King²⁸, R Kirchhoff⁶, J S Kissel²⁸,
 L Kleybolte¹⁹, S Klimenko³, P Koch⁶, S M Koehlenbeck⁶,
 V Kondrashov¹, A Kontos¹⁰, M Korobko¹⁹, W Z Korth¹,
 D B Kozak¹, C Krämer⁶, V Kringel⁶, B Krishnan⁶, G Kuehn⁶,
 P Kumar⁶⁷, R Kumar⁶³, S Kumar¹³, L Kuo⁵⁰, S Kwang¹⁴,
 B D Lackey²¹, K H Lai⁵⁴, M Landry²⁸, R N Lang¹⁴, J Lange⁷⁶,
 B Lantz³⁰, R K Lanza¹⁰, P D Lasky⁸⁴, M Laxen⁴, A Lazzarini¹,
 S Leavey²⁷, C H Lee⁵³, H K Lee⁸⁵, H M Lee⁸¹, H W Lee⁸²,
 K Lee²⁷, J Lehmann⁶, A Lenon^{23,24}, Y Levin⁸⁴, T G F Li⁵⁴,
 A Libson¹⁰, T B Littenberg⁸⁶, J Liu³⁷, R K L Lo⁵⁴,
 N A Lockerbie⁷⁷, L T London⁵⁹, J E Lord²⁵, M Lormand⁴,
 J D Lough^{6,15}, C O Lousto⁷⁶, G Lovelace¹⁷, H Lück^{15,6},
 A P Lundgren⁶, R Lynch¹⁰, Y Ma³⁶, S Macfoy³⁵,
 B Machenschalk⁶, M MacInnis¹⁰, D M Macleod²,
 I Magaña Hernandez⁵⁴, F Magaña-Sandoval²⁵,
 L Magaña Zertuche²⁵, R M Magee⁴⁹, V Mandic²⁶, V Mangano²⁷,
 G L Mansell¹⁶, M Manske¹⁴, S Márka²⁹, Z Márka²⁹,
 C Markakis⁸, A S Markosyan³⁰, E Maros¹, I W Martin²⁷,
 D V Martynov¹⁰, K Mason¹⁰, T J Massinger¹, M Masso-Reid²⁷,
 A Matas²⁶, F Matichard¹⁰, L Matone²⁹, N Mavalvala¹⁰,
 N Mazumder³⁸, R McCarthy²⁸, D E McClelland¹⁶,
 S McCormick⁴, L McCuller¹⁰, S C McGuire⁸⁷, G McIntyre¹,
 J McIver¹, D J McManus¹⁶, T McRae¹⁶, S T McWilliams^{23,24},
 D Meacher⁴⁹, G D Meadors^{21,6}, E Mejuto-Villa⁵, A Melatos⁸⁸,
 G Mendell²⁸, R A Mercer¹⁴, E L Merilh²⁸, S Meshkov¹,
 C Messenger²⁷, C Messick⁴⁹, P M Meyers²⁶, H Miao³²,
 H Middleton³², E E Mikhailov⁸⁹, A L Miller³, B B Miller⁵⁸,
 J Miller¹⁰, M Millhouse⁵⁷, J Ming²¹, C Mishra⁹⁰, S Mitra¹²,
 V P Mitrofanov³⁴, G Mitselmakher³, R Mittleman¹⁰,
 S R P Mohapatra¹⁰, B C Moore⁶⁶, C J Moore⁹, D Moraru²⁸,
 G Moreno²⁸, S R Morriss⁶¹, C M Mow-Lowry³², G Mueller³,
 A W Muir⁵⁹, Arunava Mukherjee⁶, D Mukherjee¹⁴,
 S Mukherjee⁶¹, N Mukund¹², A Mullavey⁴, J Munch⁴⁵,
 E A M Muniz²⁵, P G Murray²⁷, K Napier⁴², R K Nayak⁹¹,
 T J N Nelson⁴, M Nery⁶, A Neunzert⁷⁴, J M Newport⁷⁵,

G Newton^{‡27}, K K Y Ng⁵⁴, T T Nguyen¹⁶, A B Nielsen⁶,
 A Nitz⁶, A Noack⁶, D Nolting⁴, M E N Normandin⁶¹,
 L K Nuttall²⁵, J Oberling²⁸, E Ochsner¹⁴, E Oelker¹⁰,
 G H Ogin⁶⁸, J J Oh⁸³, S H Oh⁸³, F Ohme⁶, M Oliver⁶⁰,
 P Oppermann⁶, Richard J Oram⁴, B O'Reilly⁴, R Ormiston²⁶,
 L F Ortega³, R O'Shaughnessy⁷⁶, D J Ottaway⁴⁵, H Overmier⁴,
 B J Owen⁴⁷, A E Pace⁴⁹, J Page⁸⁶, M A Page³⁷, A Pai⁷¹,
 S A Pai³³, J R Palamos³⁹, O Palashov⁸⁰, A Pal-Singh¹⁹,
 H Pan⁵⁰, B Pang³⁶, P T H Pang⁵⁴, C Pankow⁵⁸, F Pannarale⁵⁹,
 B C Pant³³, M A Papa^{21,14,6}, H R Paris³⁰, W Parker⁴,
 D Pascucci²⁷, B L Pearlstone²⁷, M Pedraza¹, L Pekowsky²⁵,
 A Pele⁴, S Penn⁹², C J Perez²⁸, A Perreca¹, L M Perri⁵⁸,
 H P Pfeiffer⁶⁷, M Phelps²⁷, V Pierro⁵, I M Pinto⁵, M Pitkin²⁷,
 A Post⁶, J Powell²⁷, J Prasad¹², J W W Pratt²⁰, V Predoi⁵⁹,
 T Prestegard¹⁴, M Prijatelj⁶, M Principe⁵, S Privitera²¹,
 R Prix⁶, L G Prokhorov³⁴, O Puncken⁶, M Pürerer²¹, H Qi¹⁴,
 J Qin³⁷, S Qiu⁸⁴, V Quetschke⁶¹, E A Quintero¹,
 R Quitzow-James³⁹, F J Raab²⁸, D S Rabeling¹⁶, H Radkins²⁸,
 P Raffai³¹, S Raja³³, C Rajan³³, M Rakhmanov⁶¹,
 K E Ramirez⁶¹, V Raymond²¹, J Read¹⁷, S Reid³⁵,
 D H Reitze^{1,3}, H Rew⁸⁹, S D Reyes²⁵, P M Ricker⁸, S Rieger⁶,
 K Riles⁷⁴, M Rizzo⁷⁶, N A Robertson^{1,27}, R Robie²⁷,
 J G Rollins¹, V J Roma³⁹, J D Romano⁶¹, C L Romel²⁸,
 J H Romie⁴, M P Ross⁹³, S Rowan²⁷, A Rüdiger⁶, K Ryan²⁸,
 S Sachdev¹, T Sadecki²⁸, L Sadeghian¹⁴, M Sakellariadou⁹⁴,
 M Saleem⁷¹, F Salemi⁶, A Samajdar⁹¹, L Sammut⁸⁴,
 L M Sampson⁵⁸, E J Sanchez¹, V Sandberg²⁸, B Sandeen⁵⁸,
 J R Sanders²⁵, B S Sathyaprakash^{49,59}, P R Saulson²⁵,
 O Sauter⁷⁴, R L Savage²⁸, A Sawadsky¹⁵, P Schale³⁹,
 J Scheuer⁵⁸, E Schmidt²⁰, J Schmidt⁶, P Schmidt¹,
 R Schnabel¹⁹, R M S Schofield³⁹, A Schönbeck¹⁹, E Schreiber⁶,
 D Schuette^{6,15}, B W Schulte⁶, B F Schutz^{59,6}, S G Schwalbe²⁰,
 J Scott²⁷, S M Scott¹⁶, E Seidel⁸, D Sellers⁴, A S Sengupta⁹⁵,
 A Sergeev⁸⁰, D A Shaddock¹⁶, T J Shaffer²⁸, A A Shah⁸⁶,
 M S Shahrar⁵⁸, L Shao²¹, B Shapiro³⁰, P Shawhan⁴¹,
 A Sheperd¹⁴, D H Shoemaker¹⁰, D M Shoemaker⁴², K Siellez⁴²,
 X Siemens¹⁴, D Sigg²⁸, A D Silva¹¹, A Singer¹, L P Singer⁴³,
 A Singh^{21,6,15}, R Singh², A M Sintes⁶⁰, B J J Slagmolen¹⁶,
 B Smith⁴, J R Smith¹⁷, R J E Smith¹, E J Son⁸³,
 J A Sonnenberg¹⁴, B Sorazu²⁷, T Souradeep¹², A P Spencer²⁷,
 A K Srivastava⁶³, A Staley²⁹, M Steinke⁶, J Steinlechner^{27,19},
 S Steinlechner¹⁹, D Steinmeyer^{6,15}, B C Stephens¹⁴, R Stone⁶¹,

**K A Strain²⁷, S E Strigin³⁴, R Sturani⁹⁶, A L Stuver⁴,
 T Z Summerscales⁹⁷, L Sun⁸⁸, S Sunil⁶³, P J Sutton⁵⁹,
 M J Szczepańczyk²⁰, D Talukder³⁹, D B Tanner³, M Tápai⁷²,
 A Taracchini²¹, J A Taylor⁸⁶, R Taylor¹, T Theeg⁶,
 E G Thomas³², M Thomas⁴, P Thomas²⁸, K A Thorne⁴,
 K S Thorne³⁶, E Thrane⁸⁴, V Tiwari⁵⁹, K V Tokmakov⁷⁷,
 K Toland²⁷, Z Tornasi²⁷, C I Torrie¹, D Töyrä³², G Traylor⁴,
 D Trifirò⁷, J Trinastic³, M Tse¹⁰, R Tso¹, D Tuyenbayev⁶¹,
 K Ueno¹⁴, D Ugolini⁹⁸, C S Unnikrishnan⁷³, A L Urban¹,
 S A Usman⁵⁹, H Vahlbruch¹⁵, G Vajente¹, G Valdes⁶¹,
 D C Vander-Hyde²⁵, A A van Veggel²⁷, V Varma³⁶, S Vass¹,
 A Vecchio³², J Veitch³², P J Veitch⁴⁵, K Venkateswara⁹³,
 G Venugopalan¹, A D Viets¹⁴, S Vinciguerra³², D J Vine³⁵,
 S Vitale¹⁰, T Vo²⁵, C Vorvick²⁸, D V Voss³, W D Voudsen³²,
 S P Vyatchanin³⁴, A R Wade¹, L E Wade⁴⁸, M Wade⁴⁸,
 M Walker², L Wallace¹, S Walsh¹⁴, H Wang³², J Z Wang⁴⁹,
 M Wang³², Y-F Wang⁵⁴, Y Wang³⁷, R L Ward¹⁶, J Warner²⁸,
 J Watchi⁵⁵, B Weaver²⁸, L-W Wei^{6,15}, M Weinert⁶,
 A J Weinstein¹, R Weiss¹⁰, L Wen³⁷, E K Wessel⁸, P Weßels⁶,
 T Westphal⁶, K Wette⁶, J T Whelan⁷⁶, B F Whiting³,
 C Whittle⁸⁴, D Williams²⁷, R D Williams¹, A R Williamson⁷⁶,
 J L Willis⁹⁹, B Wilke^{15,6}, M H Wimmer^{6,15}, W Winkler⁶,
 C C Wipf¹, H Wittel^{6,15}, G Woan²⁷, J Woehler⁶, J Wofford⁷⁶,
 K W K Wong⁵⁴, J Worden²⁸, J L Wright²⁷, D S Wu⁶, G Wu⁴,
 W Yam¹⁰, H Yamamoto¹, C C Yancey⁴¹, M J Yap¹⁶, Hang Yu¹⁰,
 Haocun Yu¹⁰, M Zanolin²⁰, M Zevin⁵⁸, L Zhang¹, M Zhang⁸⁹,
 T Zhang²⁷, Y-H Zhang⁷⁶, C Zhao³⁷, M Zhou⁵⁸, Z Zhou⁵⁸,
 S J Zhu^{21,6}, X J Zhu³⁷, M E Zucker^{1,10}, and J Zweizig¹
 (LIGO Scientific Collaboration)**

*Deceased, March 2016.

#Deceased, March 2017.

†Deceased, February 2017.

‡Deceased, December 2016.

¹LIGO, California Institute of Technology, Pasadena, CA 91125, USA

²Louisiana State University, Baton Rouge, LA 70803, USA

³University of Florida, Gainesville, FL 32611, USA

⁴LIGO Livingston Observatory, Livingston, LA 70754, USA

⁵University of Sannio at Benevento, I-82100 Benevento, Italy and INFN, Sezione di Napoli, I-80100 Napoli, Italy

⁶Albert-Einstein-Institut, Max-Planck-Institut für Gravitationsphysik, D-30167 Hannover, Germany

⁷The University of Mississippi, University, MS 38677, USA

⁸NCSA, University of Illinois at Urbana-Champaign, Urbana, IL 61801, USA

⁹University of Cambridge, Cambridge CB2 1TN, United Kingdom

- ¹⁰LIGO, Massachusetts Institute of Technology, Cambridge, MA 02139, USA
- ¹¹Instituto Nacional de Pesquisas Espaciais, 12227-010 São José dos Campos, São Paulo, Brazil
- ¹²Inter-University Centre for Astronomy and Astrophysics, Pune 411007, India
- ¹³International Centre for Theoretical Sciences, Tata Institute of Fundamental Research, Bengaluru 560089, India
- ¹⁴University of Wisconsin-Milwaukee, Milwaukee, WI 53201, USA
- ¹⁵Leibniz Universität Hannover, D-30167 Hannover, Germany
- ¹⁶OzGrav, Australian National University, Canberra, Australian Capital Territory 0200, Australia
- ¹⁷California State University Fullerton, Fullerton, CA 92831, USA
- ¹⁸Chennai Mathematical Institute, Chennai 603103, India
- ¹⁹Universität Hamburg, D-22761 Hamburg, Germany
- ²⁰Embry-Riddle Aeronautical University, Prescott, AZ 86301, USA
- ²¹Albert-Einstein-Institut, Max-Planck-Institut für Gravitationsphysik, D-14476 Potsdam-Golm, Germany
- ²²Korea Institute of Science and Technology Information, Daejeon 34141, Korea
- ²³West Virginia University, Morgantown, WV 26506, USA
- ²⁴Center for Gravitational Waves and Cosmology, West Virginia University, Morgantown, WV 26505, USA
- ²⁵Syracuse University, Syracuse, NY 13244, USA
- ²⁶University of Minnesota, Minneapolis, MN 55455, USA
- ²⁷SUPA, University of Glasgow, Glasgow G12 8QQ, United Kingdom
- ²⁸LIGO Hanford Observatory, Richland, WA 99352, USA
- ²⁹Columbia University, New York, NY 10027, USA
- ³⁰Stanford University, Stanford, CA 94305, USA
- ³¹MTA Eötvös University, “Lendület” Astrophysics Research Group, Budapest 1117, Hungary
- ³²University of Birmingham, Birmingham B15 2TT, United Kingdom
- ³³RRCAT, Indore MP 452013, India
- ³⁴Faculty of Physics, Lomonosov Moscow State University, Moscow 119991, Russia
- ³⁵SUPA, University of the West of Scotland, Paisley PA1 2BE, United Kingdom
- ³⁶Caltech CaRT, Pasadena, CA 91125, USA
- ³⁷OzGrav, University of Western Australia, Crawley, Western Australia 6009, Australia
- ³⁸Washington State University, Pullman, WA 99164, USA
- ³⁹University of Oregon, Eugene, OR 97403, USA
- ⁴⁰Carleton College, Northfield, MN 55057, USA
- ⁴¹University of Maryland, College Park, MD 20742, USA
- ⁴²Center for Relativistic Astrophysics and School of Physics, Georgia Institute of Technology, Atlanta, GA 30332, USA
- ⁴³NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA
- ⁴⁴RESCEU, University of Tokyo, Tokyo, 113-0033, Japan.
- ⁴⁵OzGrav, University of Adelaide, Adelaide, South Australia 5005, Australia
- ⁴⁶Tsinghua University, Beijing 100084, China
- ⁴⁷Texas Tech University, Lubbock, TX 79409, USA
- ⁴⁸Kenyon College, Gambier, OH 43022, USA
- ⁴⁹The Pennsylvania State University, University Park, PA 16802, USA
- ⁵⁰National Tsing Hua University, Hsinchu City, 30013 Taiwan, Republic of China
- ⁵¹Charles Sturt University, Wagga Wagga, New South Wales 2678, Australia
- ⁵²University of Chicago, Chicago, IL 60637, USA

- ⁵³Pusan National University, Busan 46241, Korea
- ⁵⁴The Chinese University of Hong Kong, Shatin, NT, Hong Kong
- ⁵⁵Université Libre de Bruxelles, Brussels 1050, Belgium
- ⁵⁶Sonoma State University, Rohnert Park, CA 94928, USA
- ⁵⁷Montana State University, Bozeman, MT 59717, USA
- ⁵⁸Center for Interdisciplinary Exploration & Research in Astrophysics (CIERA), Northwestern University, Evanston, IL 60208, USA
- ⁵⁹Cardiff University, Cardiff CF24 3AA, United Kingdom
- ⁶⁰Universitat de les Illes Balears, IAC3—IEEC, E-07122 Palma de Mallorca, Spain
- ⁶¹The University of Texas Rio Grande Valley, Brownsville, TX 78520, USA
- ⁶²Bellevue College, Bellevue, WA 98007, USA
- ⁶³Institute for Plasma Research, Bhat, Gandhinagar 382428, India
- ⁶⁴The University of Sheffield, Sheffield S10 2TN, United Kingdom
- ⁶⁵California State University, Los Angeles, 5151 State University Dr, Los Angeles, CA 90032, USA
- ⁶⁶Montclair State University, Montclair, NJ 07043, USA
- ⁶⁷Canadian Institute for Theoretical Astrophysics, University of Toronto, Toronto, Ontario M5S 3H8, Canada
- ⁶⁸Whitman College, 345 Boyer Avenue, Walla Walla, WA 99362 USA
- ⁶⁹School of Mathematics, University of Edinburgh, Edinburgh EH9 3FD, United Kingdom
- ⁷⁰University and Institute of Advanced Research, Gandhinagar Gujarat 382007, India
- ⁷¹IISER-TVM, CET Campus, Trivandrum Kerala 695016, India
- ⁷²University of Szeged, Dóm tér 9, Szeged 6720, Hungary
- ⁷³Tata Institute of Fundamental Research, Mumbai 400005, India
- ⁷⁴University of Michigan, Ann Arbor, MI 48109, USA
- ⁷⁵American University, Washington, D.C. 20016, USA
- ⁷⁶Rochester Institute of Technology, Rochester, NY 14623, USA
- ⁷⁷SUPA, University of Strathclyde, Glasgow G1 1XQ, United Kingdom
- ⁷⁸University of Southampton, Southampton SO17 1BJ, United Kingdom
- ⁷⁹University of Washington Bothell, 18115 Campus Way NE, Bothell, WA 98011, USA
- ⁸⁰Institute of Applied Physics, Nizhny Novgorod, 603950, Russia
- ⁸¹Seoul National University, Seoul 08826, Korea
- ⁸²Inje University Gimhae, South Gyeongsang 50834, Korea
- ⁸³National Institute for Mathematical Sciences, Daejeon 34047, Korea
- ⁸⁴OzGrav, School of Physics & Astronomy, Monash University, Clayton 3800, Victoria, Australia
- ⁸⁵Hanyang University, Seoul 04763, Korea
- ⁸⁶NASA Marshall Space Flight Center, Huntsville, AL 35811, USA
- ⁸⁷Southern University and A&M College, Baton Rouge, LA 70813, USA
- ⁸⁸OzGrav, University of Melbourne, Parkville, Victoria 3010, Australia
- ⁸⁹College of William and Mary, Williamsburg, VA 23187, USA
- ⁹⁰Indian Institute of Technology Madras, Chennai 600036, India
- ⁹¹IISER-Kolkata, Mohanpur, West Bengal 741252, India
- ⁹²Hobart and William Smith Colleges, Geneva, NY 14456, USA
- ⁹³University of Washington, Seattle, WA 98195, USA
- ⁹⁴King's College London, University of London, London WC2R 2LS, United Kingdom
- ⁹⁵Indian Institute of Technology, Gandhinagar Ahmedabad Gujarat 382424, India
- ⁹⁶International Institute of Physics, Universidade Federal do Rio Grande do Norte, Natal RN 59078-970, Brazil

⁹⁷Andrews University, Berrien Springs, MI 49104, USA

⁹⁸Trinity University, San Antonio, TX 78212, USA

⁹⁹Abilene Christian University, Abilene, TX 79699, USA