

*Program*

Householder Symposium  
XVI

*May 23-27, 2005*

*Seven Springs, Pennsylvania, USA*

[Tentative 5/10/05]

Gatlinburg Los Alamos Hopfen Am See Asilomar Oxford Waterloo Fairfield Glade  
Tylosand Lake Arrowhead Pontresina Whistler Peebles Seven Springs Gatlinburg Los  
Alamos Hopfen Am See Asilomar Oxford Waterloo Fairfield Glade Tylosand Lake  
Arrowhead Pontresina Whistler Peebles Seven Springs Gatlinburg Los Alamos Hopfen Am  
See Asilomar Oxford Waterloo Fairfield Glade Tylosand Lake Arrowhead Pontresina  
Whistler Peebles Seven Springs Gatlinburg Los Alamos Hopfen Am See Asilomar Oxford  
Waterloo Fairfield Glade Tylosand Lake Arrowhead Pontresina Whistler Peebles Seven  
Springs Gatlinburg Los Alamos Hopfen Am See Asilomar Oxford Waterloo Fairfield Glade  
Tylosand Lake Arrowhead Pontresina Whistler Peebles Seven Springs Gatlinburg Los  
Alamos Hopfen Am See Asilomar Oxford Waterloo Fairfield Glade Tylosand Lake  
Arrowhead Pontresina Whistler Peebles Seven Springs Gatlinburg Los Alamos Hopfen Am  
See Asilomar Oxford Waterloo Fairfield Glade Tylosand Lake Arrowhead Pontresina  
Whistler Peebles Seven Springs Gatlinburg Los Alamos Hopfen Am See Asilomar Oxford  
Waterloo Fairfield Glade Tylosand Lake Arrowhead Pontresina Whistler Peebles Seven  
Springs Gatlinburg Los Alamos Hopfen Am See Asilomar Oxford Waterloo Fairfield Glade  
Tylosand Lake Arrowhead Pontresina Whistler Peebles Seven Springs Gatlinburg Los  
Alamos Hopfen Am See Asilomar Oxford Waterloo Fairfield Glade Tylosand Lake  
Arrowhead Pontresina Whistler Peebles Seven Springs Gatlinburg Los Alamos Hopfen Am  
See Asilomar Oxford Waterloo Fairfield Glade Tylosand Lake Arrowhead Pontresina  
Whistler Peebles Seven Springs Gatlinburg Los Alamos Hopfen Am See Asilomar Oxford  
Waterloo Fairfield Glade Tylosand Lake Arrowhead Pontresina Whistler Peebles Seven



**Alston S. Householder (1904 -1993)**

# Householder Symposium XVI

## Local Arrangements Committee

Jesse Barlow (Chair, Penn State University)  
Daniel Szyld (Temple University )  
Hongyuan Zha (Penn State University)

## Program Committee

Angelika Bunse-Gerstner (Bremen)  
Tony Chan (UCLA)  
Alan Edelman (MIT)  
Nick Higham (University of Manchester)  
Roy Mathias (College of William and Mary)  
Dianne O'Leary (University of Maryland)  
Michael Overton (New York University)  
Paul Van Dooren (Louvain-la-Neuve)  
Charles Van Loan (Chair, Cornell University)

## Householder Prize Committee

James Demmel (University of California, Berkeley)  
Volker Mehrmann (TU Berlin)  
Sabine Van Huffel (K.U. Leuven)  
Charles Van Loan (Cornell University)  
Olof Widlund (Chair, Courant Institute, New York University)

## Support

The Center for Applied Scientific Computing, Lawrence Livermore National Laboratory  
The Department of Computer Science, Cornell University  
The International Linear Algebra Society (ILAS)  
The Institute of Mathematics and Its Applications (IMA)  
The MathWorks  
National Science Foundation (NSF)  
The Pennsylvania State University  
Society for Industrial and Applied Mathematics (SIAM)

## Location

Plenary talks and breaks: Convention Hall.  
Informal talks: Convention Hall, and the Snowflake, Sunburst, and Dupre Rooms.  
Breakfast, lunch, and dinner: Alpine Room.

# Monday: May 23, 2005

**8:15 – 8:30** *Opening Remarks*

**8:30 – 9:15** **Ilse C.F. Ipsen**  
*Analysis and Computation of Google's PageRank*

**9:15 – 10:00** **James Nagy**  
*An Efficient Computational Approach for MRI Resolution Enhancement*

**10:00 – 10:30** **Break**

**10:30 – 11:15** **Mark Embree**  
*Decay Bounds for Singular Values of Solutions to Lyapunov Equations*

**11:15 – 12:00** **Zdenek Strakos**  
*Core Problems in  $Ax \approx b$  -- Analysis of Total Least Squares Revisited*

**12:00 – 12:30** **Misha Kilmer**  
*Kronecker Products and the HOSVD for 3D Imaging Applications*

**12:30 – 14:00** **Lunch**

**14:00 – 14:45** **Zlatko Drmac**  
*Closing the Gap Between Fast and Accurate SVD Methods*

**14:45 – 15:30** **Haesun Park**  
*Effective Dimension Reduction for Classification via the Generalized SVD*

**15:30 – 16:00** **W. Kahan**  
*How Futile are Mindless Assessments of Roundoff in Floating Point Computation?*

**16:00 – 16:30** **Break**

**16:30 – 18:50** **Informal Talks**  
*See next page*

**19:30 – 21:00** **Dinner**

# Monday: May 23, 2005

Convention Hall

Snowflake

Sunburst

Dupre

<b>16:30 to 16:50</b>	<b>Bollhoefer</b>	<b>Notay</b>	<b>Van Barel</b>	<b>Sun</b>
	<i>Preconditioning real and complex symmetric indefinite problems</i>	<i>Inexact Ray Quotient, Jac-Davidson &amp; Davidson: Convergence Analysis &amp; Comparison</i>	<i>Structures Preserved By the QR Algorithm</i>	<i>A Framework For FFTs on Nonequally-Spaced Data</i>

<b>16:50 to 17:10</b>	<b>Tuma</b>	<b>Hochstenbach</b>	<b>Luk</b>	<b>D. Mackey</b>
	<i>Solving sequences of linear systems by preconditioned iterative methods</i>	<i>Generalizations of Harmonic and Refined Ray-Ritz for Rightmost Eigs &amp; Structured Probs</i>	<i>Principal Component Analysis on a Grid</i>	<i>Vector Spaces Linearization for Matrix Polynomials</i>

<b>17:10 to 17:30</b>	<b>Gratton</b>	<b>Kågström</b>	<b>Vandebril</b>	<b>Mehl</b>
	<i>On the Sensitivity Of Some Spectral Preconditioners</i>	<i>Direct Eigenvalue Reordering in a Of Matrices in Periodic Real Schur Form</i>	<i>Convergence Props of Reduction to Semisep &amp; Semisep plus Diagonal Form</i>	<i>Linearization of Structured Matrix Polynomials</i>

<b>17:30 to 17:50</b>	<b>Giraud</b>	<b>D. Stewart</b>	<b>Van Dooren</b>	<b>Mengi</b>
	<i>Two-Level Spectral Preconditioners for General Linear Systems</i>	<i>A Product-Arnoldi Algorithm for Computing Eigenvalues Long Matrix Products</i>	<i>Measure of Similarity Between Graph Vertices</i>	<i>Computation of the Pseudospectral radius &amp; Distance to Uncontrollability of Mat Poly</i>

<b>17:50 to 18:10</b>	<b>Gutiérrez-Cañas</b>	<b>Gallopoulos</b>	<b>Conroy</b>	<b>Vescelic</b>
	<i>Preconditioning of Heirarchically Struct Matrices Arising in 3D EM Scattering Probs</i>	<i>Computing Pseudo-Spectra of Parameter-Dependent Matrices</i>	<i>Dimension Reduction in Document Clustering with App to Multi-Doc Text Summarization</i>	<i>Bounds for Linear Damped Systems</i>

<b>18:10 to 18:30</b>	<b>Dollar</b>	<b>Zeng</b>	<b>Sorensen</b>	<b>Guo</b>
	<i>Implicit-Factorization Block Preconditioners</i>	<i>Accurate Computation Multiple Eigenvalues and the Jordan Canonical Form</i>	<i>A Symmetry Preserving SVD</i>	<i>Method for Solving Nonsymmetric Algeb Ricatti Eqn Arising in Stoch Fluid Models</i>

<b>18:30 to 18:50</b>	<b>Frommer</b>	<b>Hida</b>	<b>Barlow</b>	<b>Mathias</b>
	<i>Graph Theoretical Methods for Preconditioners</i>	<i>Error Bounds from Extra Precise Iterative Refinement</i>	<i>A New Stable Bidiagonal Reduction Algorithm</i>	<i>Detecting Definite Elliptic &amp; Hyperbolic Eigenvalue Problems &amp; Distance Questions</i>

The last speaker in a session is kindly asked to serve as the session chair.

## Tuesday: May 24, 2005

**8:30 – 9:15 Inderjit Dhillon**

*Matrix Nearness Problems Using Bregman Divergence with Application to Datamining*

**9:15 – 10:00 Anne Greenbaum**

*New Results on the Polynomial Numerical Hull of Degree  $k$*

**10:00 – 10:30 Break**

**10:30 – 11:15 Eric de Sturler**

*Recycling Krylov Subspaces for Sequences of Linear Systems: Convergence Analysis*

**11:15 – 12:00 G.W. Stewart**

*The Quasi-Gram-Schmidt Method*

**12:00 – 12:30 Cleve Moler**

*Is It Finally the Time for a Parallel Matlab?*

**12:30 – 14:00 Lunch**

**14:00 – 15:30 Break**

**15:30 – 17:30 Informal Talks**

*See next page*

**18:30 – 20:30 Dinner**

**20:30 – 22:10 Informal Talks**

*See the page after the next page*

## Tuesday: May 24, 2005

Convention Hall

Snowflake

Sunburst

Dupre

<b>16:00 to 16:20</b>	<b>Jonsson</b>	<b>Van Huffel</b>	<b>Fu</b>	<b>Eisenstat</b>
	<i>Recursive Blocked Algorithms for Triangular Periodic Sylvester-Type Eqns</i>	<i>On the Equivalence Between TLS and Maximum Likelihood PCA with Applications</i>	<i>Efficient Minimization Methods of Mixed Norms for Image Restoration.</i>	<i>The Elimination Tree of A Nonsymmetric Matrix: Theory and Practice</i>

<b>16:20 to 16:40</b>	<b>Olshevsky</b>	<b>Renaut</b>	<b>Huckle</b>	<b>Reid</b>
	<i>General Eigenvalue Problems Via Quasiseparable Matrices</i>	<i>A Regularized Total Least Squares Linear Support Vector Machine</i>	<i>Iterative Solvers for Multilevel Block Toeplitz Matrices</i>	<i>Reducing Bandwidths And Profiles of a Sparse Unsymmetric Matrix</i>

<b>16:40 to 17:00</b>	<b>Xu</b>	<b>Paige</b>	<b>Capizzano</b>	<b>T. Davis</b>
	<i>Equivalence Relation Between a Generalized Symplectic Pencil &amp; a Skew/Hermitian Pencil</i>	<i>Computing Test Statistics: Some Genuine Dangers &amp; Solutions</i>	<i>Majorization and Toeplitz Tools in PDEs Preconditioning</i>	<i>Sparse Matrix Factorization: Looking Left, Looking Right, Looking Up</i>

<b>17:00 to 17:20</b>	<b>Elmroth</b>	<b>Chang</b>	<b>Rojas</b>	<b>Duff</b>
	<i>Tools &amp; Theory for Iterative Investigation of Nearby Canonical Forms of Mat Pencils</i>	<i>Computation of Huber's M-Estimates For a Block-Angular Regression Problem</i>	<i>Matlab Software for Large Scale Trust-Region Subproblems &amp; Regularization</i>	<i>Further Advances in the Solution of Sparse Indefinite Systems</i>

<b>17:20 to 17:40</b>	<b>Absil</b>	<b>Rozloznik</b>	<b>Greif</b>	<b>Ng</b>
	<i>Model-Based Methods For Computing Extreme Eigenpairs Of Definite Pencils</i>	<i>Rounding Error Analysis of Classical Gram-Schmidt and Its Applications</i>	<i>Augmented Lagrangian Sol'n of Saddle-Point Linear Systems Using Cond Number Minim.</i>	<i>Effective Preconditioning Through Ordering Interleaved with Incomplete Factorization</i>

<b>17:40 to 18:00</b>	<b>Gallivan</b>	<b>Langou</b>	<b>Nichols</b>	<b>Scott</b>
	<i>Adaptive Model Trust Region Methods for Generalized Eigenvalue Problems</i>	<i>Reorthogonalization In the Classical Gram-Schmidt Process</i>	<i>Very Large-Scale Inverse Problems in Atmospheric and Ocean Modelling</i>	<i>On Solving Large Sparse Linear Systems Out of Core</i>

The last speaker in a session is kindly asked to serve as the session chair.

## Tuesday: May 24, 2005

Convention Hall

Snowflake

Sunburst

Dupre

<b>20:30 to 20:50</b>	<b>Bader</b>	<b>Meurant</b>	<b>O'Leary</b>	<b>Antoulas</b>
	<i>MATLAB Tensor Classes for Fast Algorithm Prototyping In Multilinear Algebra</i>	<i>The Lanczos Algorithm in Finite Precision Revisted</i>	<i>The Linear Algebra Of Quantum Computing</i>	<i>A Krylov-Based Approach to Minimax Model Reduction</i>
<b>20:50 to 21:10</b>	<b>Perrone</b>	<b>Mastronardi</b>	<b>Lippert</b>	<b>Gugercin</b>
	<i>Kronecker Approx for Anti-Reflexive Boundary Conditions In Image Restoration</i>	<i>Lanczos Reduction to Semiseparable Matrices and Computing Dominant Subspaces</i>	<i>The Geometry of the Operator Norm in Global Eigenvalue Perturbation</i>	<i>A Successive Rational Krylov Algorithm for Optimal <math>H_2</math> Model Reduction</i>
<b>21:10 to 21:30</b>	<b>Woerdeman</b>	<b>Yeung</b>	<b>Edelman</b>	<b>Ruhe</b>
	<i>The Extension Problem For Toeplitz-Tensor-Toeplitz Matrices</i>	<i>Transpose-Free Multiple Lanczos and Its Application in Pade Approximation</i>	<i>Random Matrices: From Theory to Toolboxes</i>	<i>Rational Krylov for Model Reduction</i>
<b>21:30 to 21:50</b>	<b>Martin</b>	<b>Battles</b>	<b>Dumitriu</b>	<b>Stykel</b>
	<i>Compression of Higher-Dimensional Arrays Using the SVD</i>	<i>CG Operators in Matlab</i>	<i>Tridiagonal Random Matrices: A New Perspective on Beta-Ensembles</i>	<i>Stability Analysis and Model Reduction for Coupled Systems</i>
<b>21:50 to 22:10</b>	<b>Van Loan</b>	<b>Bridson</b>	<b>Betcke</b>	<b>Bunse-Gerstner</b>
	<i>Tensor Rank and Matrix Factorizations</i>	<i>A Multi-Preconditioned Conjugate Gradient Method</i>	<i>The Linear Algebra of Eigenvalue Problems On Polygons</i>	<i>Second-Order Reduced Systems from First Order Krylov Subspace Methods</i>

The last speaker in a session is kindly asked to serve as the session chair.



## Wednesday: May 25, 2005

**8:30 – 9:15 Shivkumar Chandrasekaran**  
*Fast Multi-scale Direct Solvers*

**9:15 – 10:00 Luca Gemignani**  
*Fast QR Eigenvalue Algorithms for Some Classes of Structured Matrices*

**10:00 – 10:30 Break**

**10:30 – 11:15 Roland Freund**  
*Optimal Krylov Subspace-Based Reduced Order Modeling of Large-Scale Systems of Integro-DAEs*

**11:15 – 11:45 Françoise Tisseur**  
*On the Conditioning of Polynomial Eigenproblem Linearizations*

**11:45 – 12:45 Lunch**

**12:45 – 18:00 Excursion to Fallingwater/Kentuck Knob**

**18:30 - 19:30 Champagne Reception**

**19:30 – 21:00 Dinner**

**21:00 - 21:30 After Dinner Talk: Jack Dongarra**  
*The Impact of Computer Architectures on Linear Algebra Software*

**21:30 – 21:35 Householder Prize Announcement**

## Thursday: May 26, 2005

**8:30 – 9:15** **Ralph Byers**  
*Structured Backward Error without a Structure Preservation Algorithm*

**9:15 – 10:00** *Householder Prize Talk*

**10:00 – 10:30** **Break**

**10:30 – 11:15** **Joseph Greer**  
*Solution of a Problem of Stewart and Wilkinson for an Effective Way to Determine the Backward Stability of a Linear Least Squares Solution*

**11:15 – 12:00** **Steven Vavasis**  
*Solving Elliptic Finite Element Systems in Near-Linear Time with Support Preconditioners.*

**12:00 – 12:30** **Howard C. Elman**  
*Linear Algebra Issues Associated with the Stochastic Finite Element Method*

**12:30 – 14:00** **Lunch**

**14:00 – 14:45** **Michele Benzi**  
*Preconditioning Techniques for Complex Symmetric Linear Systems*

**14:45 – 15:30** **Zhaojun Bai**  
*Structure-Preserving Algorithms for Quadratic Eigenvalue Problems and Reduced Order Modeling of Second-Order Systems*

**15:30 – 16:00** **James Demmel**  
*The Future of LAPACK and ScaLAPACK*

**16:00 – 16:30** **Break**

**16:30 - 18:50** **Informal Talks**  
*See next page.*

**19:30 – 23:30** **Farewell Dinner with Music and Dance**

# Thursday: May 26, 2005

Convention Hall

Snowflake

Sunburst

Dupre

<b>16:30 to 16:50</b>	<b>Gustavson</b>	<b>Simoncini</b>	<b>Varga</b>	<b>Ramage</b>
	<i>Storage Efficient Sparse Recursive Householder Gram- Schmidt Algorithm</i>	<i>Recent Advances in Approximation Techniques Using Krylov Subspaces</i>	<i>On Some New Gershgorin-like Eigenvalue Inclusions for Infinite Matrices</i>	<i>Some Characteristics Multigrid Performance For 2-Dimensional Convection-Diff Eqns</i>

<b>16:50 to 17:10</b>	<b>Bientinisi</b>	<b>Baker</b>	<b>Overton</b>	<b>Chartier</b>
	<i>Parallel Eigensolver Dense Sym Matrices Based on Multiple Robust Representations</i>	<i>Observations on Restarted GMRES Convergence Behavior</i>	<i>Structured Indefinite Perturbations in Hermitian Matrices</i>	<i>Adaptive Multigrid Via Subcycling on Complementary Grids</i>

<b>17:10 to 17:30</b>	<b>Foster</b>	<b>Morgan</b>	<b>Holtz</b>	<b>Knyasev</b>
	<i>BLAS-3 Implement Of Rook-Pivoting and rank-Revealing Algorithms</i>	<i>Deflation and Pseudoeigenvectors for Krylov Methods</i>	<i>On Accurate Floating Point Polynomial Evaluation</i>	<i>Preconditioned Eigenvalue Solvers in Electronic Structure Calculations</i>

<b>17:30 to 17:50</b>	<b>van de Geign</b>	<b>Liesen</b>	<b>Higham</b>	<b>Stathopoulos</b>
	<i>The Science of Developing Linear Algebra Libraries</i>	<i>Convergence of Krylov Subspace Methods for Normal Matrices</i>	<i>Efficient Algorithms for the Matrix Cosine and Sine Functions</i>	<i>Appropriate Use of Jacobi-Davidson Variants for Symmetric Eigenvalue Problems</i>

<b>17:50 to 18:10</b>	<b>Demmel/Dongarra</b>	<b>Tichy</b>	<b>Ernst</b>	<b>van den Eshof</b>
	<i>Open Forum: LAPACK and scaLAPACK</i>	<i>Worst-Case and Ideal GMRES for Jordan Block</i>	<i>Restarting the Arnoldi Process for the Approximation of Matrix Functions</i>	<i>Perturbed Krylov Subspace Solvers and the QCD Overlap Operator</i>

<b>18:10 to 18:30</b>	<b>Demmel/Dongarra</b>	<b>Gutknecht</b>	<b>Li</b>	<b>Lehoucq</b>
	<i>Open Forum: LAPACK and scaLAPACK</i>	<i>Block Krylov Space Methods for Linear Systems with Multiple Right-hand Sides</i>	<i>Asymptotically Optimal Lower Bounds for the Condition Number of a Real Vandermonde</i>	<i>ODEs and Eigenvalue Solvers</i>

<b>18:30 to 18:50</b>	<b>Demmel/Dongarra</b>	<b>Szyld</b>	<b>Arioli</b>	
	<i>Open Forum: LAPACK and scaLAPACK</i>	<i>Effect of Non-Optimal Bases on Convergence of Krylov Subspace Methods</i>	<i>Block Partitioned Matrices, Inf-Sup Conditions and Stopping Criteria</i>	

The last speaker in a session is kindly asked to serve as the session chair.

## Friday: May 27, 2005

**8:30 – 9:15** **Lloyd N. Trefethen**  
*Spectra and Pseudospectra*

**9:15 – 10:00** **Niloufer Mackey**  
*Structured Factorizations: Theory and Computation*  
(The ILAS Lecture)

**10:00 – 10:30** **Break**

**10:30 – 11:00** **Heike Fassbender**  
*Krylov-Subspace Based Methods for  $Ax = b$  where  $A$  is a special Normal Matrix*

**11:00 – 11:30** **Peter Benner**  
*The Matrix Factorization Paradigm for Solving Matrix Equations*

**11:30 – 12:00** **Volker Mehrmann**  
*A Numerically Strongly Stable Method for Computing the Hamiltonian-Schur Form*

**12:00 – 13:30** **Lunch**

**13:30 - 14:00** **David Bindel**  
*Continuation of Invariant Subspaces of Sparse Parameter-Dependent Matrices*

**14:00 – 14:30** **Daniel Kressner**  
*The Product Eigenvalue Problem: Theory and Applications*

**14:30 – 15:00** **Plamen Koev**  
*Accurate Computations with Totally Nonnegative Matrices*

**15:00 – 15:05** *Closing Remarks*

# Speaker Times

Absil	T	17:20	Gallivan	T	17:40	Nagv	M	09:15
Antoulas	T	20:30	Gallooulos	M	17:50	Ng	T	17:20
Arioli	R	18:30	Gemignani	W	09:15	Nichols	T	17:40
			Giraud	M	17:30	Notay	M	16:30
Bader	T	20:30	Gratton	M	17:10			
Bai	R	14:45	Grcar	R	10:30	O'Leary	T	20:30
Baker	R	16:50	Greenbaum	T	09:15	Olshevsky	T	16:20
Barlow	M	18:30	Greif	T	17:20	Overton	R	16:50
Battles	T	21:30	Gugercin	T	20:50	Paige	T	16:40
Benner	F	11:00	Guo	M	18:10	Park	M	14:45
Benzi	R	14:00	Gustavson	R	16:30	Perrone	T	20:50
Betcke	T	21:50	Gutierrez-Canas	M	17:50			
Bientinesi	R	16:50	Gutknecht	R	18:10	Ramage	R	16:30
Bindel	F	13:30				Reid	T	16:20
Bollhoefer	M	16:30	Hida	M	18:30	Renaut	T	16:20
Bridson	T	21:50	Higham	R	17:30	Rojas	T	17:00
Bunse-Gerstner	T	21:50	Hochstenbach	M	16:50	Rozloznic	T	17:20
Byers	R	08:30	Holtz	R	18:10	Ruhe	T	21:50
			Huckle	T	16:20			
Capizzano	T	16:40				Scott	T	17:40
Chandrasekaren	W	08:30	Ipsen	M	08:30	Simoncini	R	16:30
Chang	T	17:00				Sorensen	M	18:10
Chartier	R	16:50	Jonsson	T	16:00	Stewart, D.	M	17:30
Conroy	M	17:50				Stewart, G.W.	T	11:15
			Kagstrom	M	17:10	Stathopoulos	R	17:30
Davis, T.	T	16:40	Kahan	M	15:30	Strakos	M	11:15
Demmel	R	15:30	Kilmer	M	12:00	Stykel	T	21:30
de Sturler	T	10:30	Knyazev	R	17:10	Sun	M	16:30
Dhillon	T	08:30	Koev	F	14:30	Szyld	R	18:30
Dollar	M	18:10	Kressner	F	14:00	Tichy	R	17:50
Dongarra	W	21:00				Tisseur	W	11:15
Drmac	M	14:00	Langou	T	17:40	Trefethen	F	08:30
Duff	T	17:00	Lehoucq	R	18:10	Tuma	M	16:50
Dumitriu	T	21:30	Li	R	17:10			
			Liesen	R	17:30	Van Barel	M	16:30
Edelman	T	21:10	Lippert	T	20:50	Vandebril	M	17:10
Eisenstat	T	16:00	Luk	M	16:50	Van de Geign	R	17:30
Elman	R	12:00				Van den Eshof	R	17:50
Elmroth	T	17:00	Mackey, N.	F	09:15	Van Dooren	M	17:30
Embree	M	10:30	Mackey, S.	M	16:50	Van Huffel	T	16:00
Ernst	R	17:50	Martin	T	21:30	Van Loan	T	21:50
			Mastronardi	T	20:50	Varga	R	16:30
Fassbender	F	10:30	Mathias	M	18:30	Vavasis	R	11:15
Foster	R	17:10	Mehl	M	17:10	Veselic	M	17:50
Freund	W	10:30	Mehrmann	F	11:30			
Frommer	M	18:30	Mengi	M	17:30	Woerdeman	T	21:10
Fu	T	16:00	Meurant	T	20:30	Xu	T	16:40
			Moler	T	12:00	Yeung	T	21:10
			Morgan	R	17:10	Zeng	M	18:10

